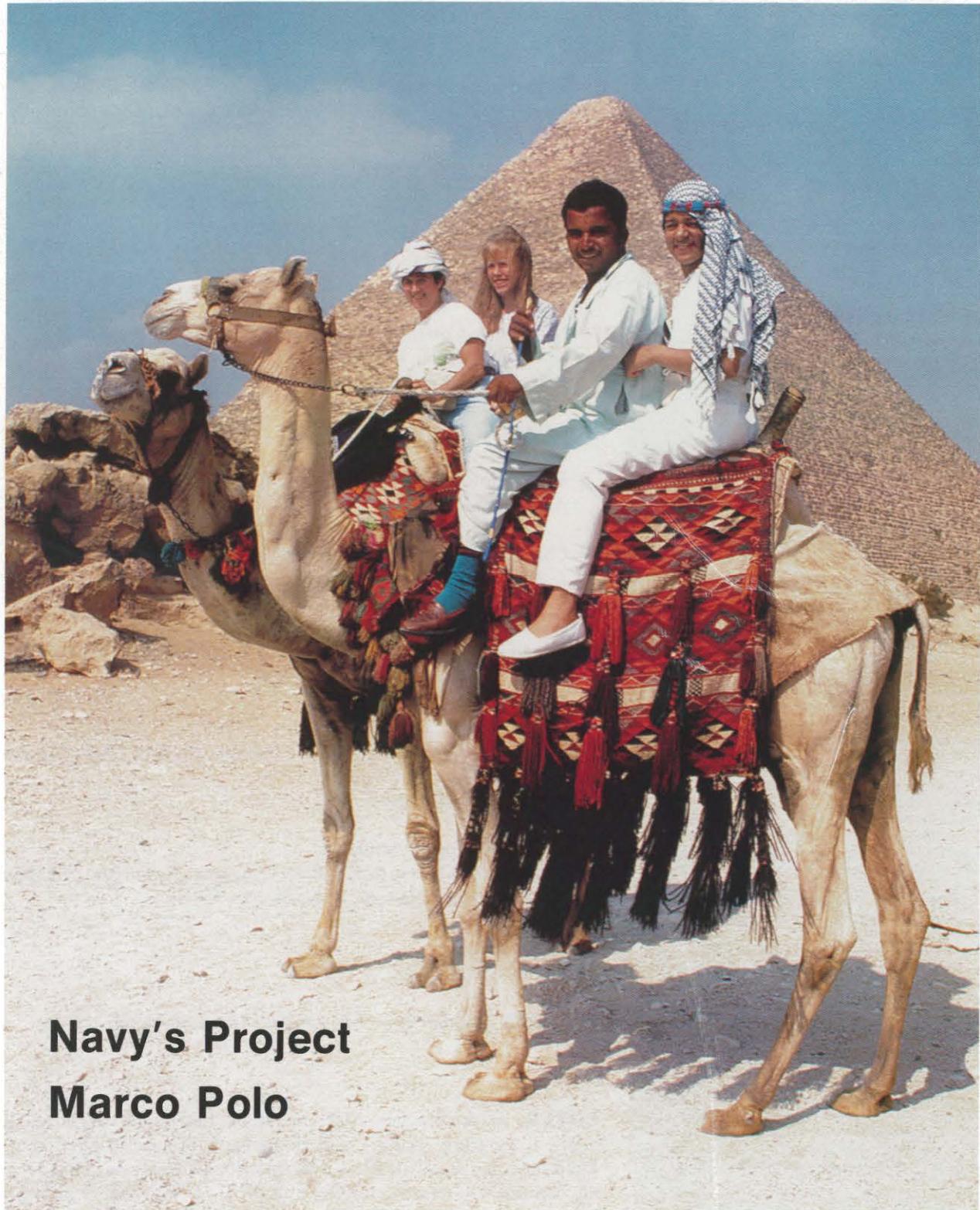


NAVY MEDICINE

November-December 1992



**Navy's Project
Marco Polo**

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NAVY MEDICINE, Vol. 83, No. 6, (ISSN 0895-8211 USPS 316-070) is published bimonthly by the Department of the Navy, Bureau of Medicine and Surgery (BUMED 09H), Washington, DC 20372-5120. Second-class postage paid at Washington, DC, and additional mailing offices.

POSTMASTER: Send address changes to *Navy Medicine* care of Naval Publications and Forms Center, ATTN: Code 306, 5801 Tabor Avenue, Philadelphia, PA 19120.

POLICY: *Navy Medicine* is the official publication of the Navy Medical Department. It is intended for Medical Department personnel and contains professional information relative to medicine, dentistry, and the allied health sciences. Opinions expressed are those of the authors and do not necessarily represent the official position of the Department of the Navy, the Bureau of Medicine and Surgery, or any other governmental department or agency. Trade names are used for identification only and do not represent an endorsement by the Department of the Navy or the Bureau of Medicine and Surgery. Although *Navy Medicine* may cite or extract from directives, authority for action should be obtained from the cited reference.

DISTRIBUTION: *Navy Medicine* is distributed to active duty Medical Department personnel via the Standard Navy Distribution List. The following distribution is authorized: one copy for each Medical, Dental, Medical Service, and Nurse Corps officer; one copy for each 10 enlisted Medical Department members. Requests to increase or decrease the number of allotted copies should be forwarded to *Navy Medicine* via the local command.

NAVY MEDICINE is published from appropriated funds by authority of the Bureau of Medicine and Surgery in accordance with Navy Publications and Printing Regulations P-35. The Secretary of the Navy has determined that this publication is necessary in the transaction of business required by law of the Department of the Navy. Funds for printing this publication have been approved by the Navy Publications and Printing Policy Committee. Articles, letters, and address changes may be forwarded to the Editor, *Navy Medicine*, Department of the Navy, Bureau of Medicine and Surgery (BUMED 09H), Washington, DC 20372-5120. Telephone (Area Code 202) 653-1237, 653-1297; Autovon 294-1237, 294-1297. Contributions from the field are welcome and will be published as space permits, subject to editing and possible abridgment.

For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

NAV MED P-5088

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COVER: Alaska teacher, Marjorie Menzi (left), and two of her students, Erica Cline (center), and Berthania Florimont (right), went to Egypt last summer with Project Marco Polo, a program sponsored by the National Geographic Society and the U.S. Navy. Story on page 8. Photo by Patricia Lanza, digitally processed by the Naval Imaging Command.

Navy Drug and Alcohol Program Reaches Out Internationally

Military and civilian members of the Navy Drug and Alcohol Program Office had a chance to make history when they hosted five Russian military counterparts.

The visit reciprocated a 1991 visit by U.S. Navy military and civilian physicians, treatment, and education specialists to military and civilian facilities in Moscow and St. Petersburg.

General-Major Ivan Chizh, First Deputy of Military Medicine, led the Russian Army and Navy delegation. Other military members were COL Georgi Scharaevskiy, Chief of Naval Medical Services, counterpart of the U.S. Navy's Surgeon General; COL Victor Smirnov, Chief Psychiatrist of

the Ministry of Defense in the Commonwealth of Independent States; and COL Ivan Izumetsev, Chief of Medical Services of St. Petersburg Military District. Dr. Levon Badalian, President of Health to the World and Director of Narcological Treatment for Adolescents in Moscow, represented the civilian community.

Gifts were exchanged when RADM Roberta L. Hazard, Assistant Chief of Naval Personnel for Personal Readiness and Community Support, welcomed the delegation and in a visit with the Navy's Surgeon General, VADM Donald Hagen. The delegation visited the Marine Corps' Substance Abuse Counseling Center in Quantico, VA, and the Tri-Service Alcoholism Recovery Department at

National Naval Medical Center, Bethesda, MD. There, a panel of 70 patients, staff, and former patients explained inpatient treatment for alcoholism and shared experiences with the Russian visitors.

CAPT Jerry W. Harp, Director of the Navy Drug and Alcohol Program, and host for this year's visit, said, "In 1991 we visited the 50-bed psychiatric unit of Moscow Military Hospital where alcoholic military members are treated on an inpatient basis anywhere from 6 to 8 weeks to 8 months. Tranquilizers and other depressants are common treatment modalities for patients needing detox or treatment for alcoholism. Only alcoholic officers and some warrant officers in what I consider the late stages of alcoholism



COL Georgi Scharayez-skiy, Chief, Naval Medi-cal Service of the Commonwealth of Independent States, presents a gift to VADM Donald Hagen, Surgeon General of the Navy, as CTI1 Joseph Harthcock, translator, looks on.

are treated. Because enlisted members are conscripted for 2 years, they are discharged if they exhibit problems with alcohol.

"In contrast with the Navy which recognizes alcoholism as an illness and has found that it is cost-effective to treat both officers and enlisted members with alcohol abuse problems on an outpatient basis at Counseling and Assistance Centers and alcoholics on an inpatient basis at Naval Alcohol Rehabilitation Centers or Alcohol Rehabilitation Departments of naval hospitals, Russians treat alcoholism as a moral or psychiatric problem.

"During fiscal year 1991, almost 18,000 Navy members were screened and referred for an appropriate level of treatment in Navy facilities. Most returned to full, productive service.

This visit educated the Russian military and civilian visitors about our comprehensive program."

Dr. David J. Powell, President of Education and Training Programs, Inc., an international health services and human development firm in Windsor, CT, providing clinical supervision of Navy and Marine Corps counselors in treatment facilities, has played a major role in leading international exchanges, first to China in 1979, and to the former Soviet Union in 1989. At that international conference, the concept of an exchange on alcoholism between the two militaries began when Dr. Powell met with the Soviet Peace Committee and with the Office of the Secretary of Defense.

Dr. Powell is also on the Board of Directors of the International Institute

for Alcoholism Education and Training, an organization which has established a 42-bed, American-directed cooperative inpatient rehabilitation center in Moscow. The Institute trains Russians and Poles at American treatment facilities and universities, and has implemented an alcoholism education campaign on Russian television which reaches an audience of eight to nine million viewers.

After 2 years of negotiations with the Soviet and American militaries, Dr. Powell was instrumental in presenting the idea of including Navy education and treatment specialists in an information exchange. Dr. Powell accompanied the Navy delegation to Moscow and Leningrad in the spring of 1991.

Dr. Powell echoes CAPT Harp's observations. "When I visited the former Soviet Union in 1989, and again with the Navy delegation in 1991, I found that most treatment programs are carried out by 'narcologists,' medical-psychiatric specialists in the field of drug abuse and addiction.

Narcologists do not counsel patients as counselors in our facilities are trained to do. Navy and Marine Corps counselors are not therapists but are trained to help patients recognize alcohol as a drug, and understand and accept alcoholism as a disease and that the disease can be arrested only with complete abstinence. Also, the practice of training supervisors to identify troubled employees and refer them for treatment does not exist. Instead, narcologists screen, diagnose, and treat alcoholics. Although they might accept the disease concept of alcoholism, they continue to search for a gene that differentiates the alcoholic from the nonalcoholic. Additionally, there is no outpatient treatment for alcohol abusers or alcoholics. They have long believed that the alcoholic can be cured solely through detoxification. They do not see a need to treat the whole person.

Unconventional treatments include using ultraviolet light, physical therapy, acupuncture, mud packs or herbal baths, hyperbaric high pressure

oxygen chambers, and a kind of blood dialysis, where the blood is filtered through a charcoal-type filter. The belief is that the machine somehow filters the blood and eliminates certain enzymes, breaking the chain of the disease process. The theory is that after three such treatments, the craving for alcohol is eliminated.

While alcoholism is officially recognized as a disease, the definition differs significantly from U.S. authorities on alcoholism. Robert Davis, a research psychologist with the Human Factors Section of the U.S. Army Foreign Science and Technology Center, Charlottesville, VA, stated in a recent telephone interview, "Today, the leaders of the emerging Commonwealth of Independent States are focused solely on political and economic concerns. If and when the climate stabilizes, regional leaders will face an addiction problem that will have by then become the greatest obstacle to social progress and public health."

In a recent published paper, Davis chronicled alcohol abuse in the former Soviet Union. The Russian people have been known historically as a hard-drinking citizenry. Over the past 40 years, alcohol consumption rose 600 percent, although the population grew only 25 percent.

Although alcohol abuse was recognized as the worst social problem, drunkenness was tolerated because it served as an escape mechanism for the average citizen. Anti-alcohol programs have come and gone throughout Russian and Soviet history, but most were short-lived.

In March 1985, as General Secretary of the Communist Party of the Soviet Union, Mikhail Gorbachev enacted a program titled "On Measures to Overcome Drunkenness and Alcoholism," commonly referred to as

the "Anti-Alcohol Campaign." Shortly thereafter, the Soviet Council of Ministers established the "All-Union Voluntary Temperance Promotion Society" or the TPS. Initially, the program called for reductions in legal production of alcohol by half over a 5-year period and closing of 2,000 production plants. Liquor stores were closed during working hours, and the cost of some alcoholic beverages doubled. Drinking on the work site and absenteeism resulting from drunkenness was reduced by 50 percent. Alcohol-related accidents were reduced by 26 percent. Nine hundred thousand illegal stills were confiscated.

However, in the late 1980's, over 85 percent of the Soviet people were against the anti-alcohol program. The goal of complete sobriety was too radical for a populace who believed that vodka was an integral part of Russian culture. As a result, although liquor prices are still high, liquor store hours have been expanded and the supply of vodka increased.

When questioned about statistics, Davis replied, "Although we have passed through the era of Glasnost or openness, realistic statistics on the true number of alcoholics were never openly published. The Soviets have only one method for gathering data on drug and alcohol abuse. That is the 'Registry,' a closely controlled record maintained by the Ministry of Internal Affairs of citizens who have questionable political views, criminal records, or psychological problems.

Alcohol abusers who are repeatedly apprehended by the police, who turn themselves in, or who are committed by family members are placed on the Registry. However, most Russians drink at home and avoid confrontation with the police. Therefore,

they are not counted as alcoholics. Women, Party members, and youth are less likely to be registered. According to official Soviet figures, as of 1990, there are about five million alcoholics. This data refers only to the number of registered chronic alcoholics. Several nongovernment sources have conservatively estimated the total number of chronic alcoholics as about 15 million or about 5 percent of the population. Others speculate that a better figure would be 20 to 22 million. In contrast, estimates of all alcoholics in the United States are between 5 and 10 percent of our total population."

Unofficial diplomacy included touring the Naval Academy and the Capitol, sharing Independence Day activities on the Washington Mall as guests of the Navy Band, a barbecue with Navy staff and family members, and shopping at a suburban Virginia mall. The Americans and Russians shared many moments of informal discussions about family, and differences in cultures and customs.

Before departing Kennedy Airport in New York City, the delegation visited Ashley, a world-renowned civilian treatment facility near Baltimore, MD; and High Watch Farm in Kent, CT, a civilian residential treatment facility based on the 12-Step Alcoholics Anonymous' principles and philosophy.

Both the American military and civilian hosts found the Russian visitors a most warm and gracious group and the experience a most rewarding one. The Russian visitors expressed an interest in continuing the dialogue in future visits. □

—Story by Jessica R. Harding, Program Manager for Public Affairs, Marketing and Media, Navy Drug and Alcohol Program, Washington, DC 20370-5630. Photos by CPL Michael J. Little, USMC.

Society of Medical Consultants to the Armed Forces Meets Aboard USNS *Comfort*

From 30 Oct to 1 Nov, VADM Donald F. Hagen, Surgeon General of the Navy, hosted a meeting of the Society of Medical Consultants to the Armed Forces (SMCAF). A portion of the event appropriately took place aboard USNS *Comfort* (T-AH 20), and marked SMCAF's 47th anniversary. The society was originally created after World War II to benefit the Army. Because of its success in helping reorganize the Army Medical Department, membership requirements were broadened to include civilian physi-

cians who had served on active duty in any of the three military medical departments. Since 1951 SMCAF has become a noteworthy political action body acting as a forum where representatives of the Army, Navy, and Air Force medical services can speak frankly about such problems as health care delivery, postgraduate training and specialization, and career development.

CAPT Roger J. Pentzien, MC, commanding officer of the medical treatment facility (MTF) aboard hospital ship *Comfort* during the Gulf

War, arranged a series of three continuing medical education lectures revolving around the meeting's theme, "Military Medicine Into the 21st Century."

CAPT Richard F. Southby, MSC, USNR-R, chairman and Friesen professor of international health and health policy, and professor of health care services at George Washington University Department of Health Sciences Management and Policy in Washington, DC, gave the keynote lecture. Dr. Southby detailed how the national and international situation is affecting reductions in defense spending and how those reductions, although justified in many areas, will affect military health care. Military health care, according to Dr. Southby, should not be reduced to the point where we don't have resources to "conserve our fighting strength." The military services must maintain their ability to carry out their worldwide mission. Recognizing that health care is the number two public concern in the United States after the economy, Dr. Southby indicated that cost, access, allocation of resources, unnecessary care, and administrative waste and confusion are the key areas needing reform. Without improvement in these areas, the implications for military health care is dire, he pointed out. If the scope of military health care is limited to active duty only, what are the implications for re-



VADM Hagen shows off one of USNS *Comfort*'s spaces.



**The Surgeons General (left to right):
LTG Alexander Sloan, USAF, VADM
Hagen, and LTG Alcide LaNoue, USA**

cruitment and retention of health care professionals as well as for education and research programs? Is the military health care system right for the 21st century and what is the appropriate role for the Reserves? What is most important, he stressed, is that military health care is a vital part of our defense and society. We have an obligation not to defend the status quo but rather to be prepared to anticipate change and manage it constructively.

CAPT Erwin F. Hirsch, MC, USNR-R, professor and chief, general surgery, and director of trauma at Boston University School of Medicine's

University Hospital in Boston, MA, presented the second lecture. Dr. Hirsch centered his presentation on the development of a program that would prepare military surgeons for future operational needs. Dr. Hirsch concentrated on scope of training, current techniques, and areas which are of particular importance in caring for combat casualties.

Dr. Hirsch further pointed out that operational preparedness for deployable surgeons can be taught and rehearsed in a variety of ways, and that the key to success is to identify the characteristics of possible future conflicts.

CAPT William S. Dial, MSC, USN, director of the Joint Office for Medical Planning, Joint Chiefs of Staff, offered the third lecture, "Concepts of Planning for Medical Support in Changing Times." Planning for geopolitical change was his central theme. Civil wars and tribal conflicts appear to be springing up all over the globe. With the collapse of the Soviet bloc, ancient ethnic rivalries, long held in check, have bubbled to the surface. As a result, national boundaries are being re-formed, often over the protests of parent countries and an international community that craves stability.

Medical planning for these conflicts, although offering many opportunities to utilize current doctrine, must still take into account the un-

known. With superpower conflict now obsolete, low intensity conflict is what we will be dealing with medically.

Such planning centers on preparing for and treating the effects of biological and chemical weapons. CAPT Dial stressed that conflict will inevitably lead to U.S. military involvement in some capacity, and that only good medical planning will ensure that the military medical departments accomplish their missions.

Dr. Enrique Mendez, Assistant Secretary of Defense for Health Affairs, was the society's distinguished evening banquet speaker as the meeting moved to the Uniformed Services University of the Health Sciences in Bethesda, MD. Dr. Mendez's theme echoed those speakers who preceded him—health care costs, force restructuring, and alternative options for health care cost reductions.

Day three opened with the theme, organization and logistics of a triage center. Dr. Nguyen Huy Phan, former North Vietnamese Surgeon General and now professor and head of the Department of Plastic Surgery at Hanoi Medical College, spoke on "Hospitalization of Victims in Case of Mass Casualties," giving a rare insight into how an underdeveloped nation has coped with an age-old problem.

Following the conclusion of this talk, VADM Hagen, joined by his fellow Surgeons General, LTG Alcide LaNoue of the Army and LTG Alexander Sloan of the Air Force, held a panel discussion, each answering questions centering on the relevance of medical support and planning for the future of military medicine. □

—Story by CAPT Roger J. Pentzien, MC, and LCDR Robert M. Padula, MSC, Bureau of Medicine and Surgery, Washington, DC 20372-5120.



**Assistant Secretary of Defense for
Health Affairs, Dr. Henrique Mendez**

Everything You Always Wanted to Know But Didn't Know Who to Ask

Navy Issue Condoms

LCDR Peter J. Weiss, MC, USN
CDR Patrick E. Olson, MC, USN
CDR Stephanie K. Brodine, MC, USN

Condoms have long been used for contraception and prevention of sexually transmitted diseases (STDs). Recently, they have been advocated for the prevention of HIV (human immunodeficiency virus) transmission. The Navy routinely provides condoms to sailors and marines both ashore and afloat. In our experience, it is not unusual to obtain a history of condom breakage when interviewing patients with STDs, and this has led to a perception among some Navy physicians and corpsmen that "Navy Issue" condoms are of lower quality than those available in stores. Although many patients may be reporting accurately, it is reasonable to suspect a bias to report condom breakage rather than nonuse in this patient population. We would therefore like to review the process by which condoms are acquired and distributed by the Navy.

All condoms manufactured in the United States must meet certain standards for approval by the U.S. Food and

Drug Administration (FDA). These are detailed in the American Society for Testing and Materials (ASTM) Designation D3492-89 and include standards for porosity, tensile strength, and ultimate elongation. In addition to internal product testing performed by the manufacturer, the FDA conducts tests of these properties from two lots of condoms per manufacturer per quarter (as specified in MIL-STD-105). A failure rate of 0.4 percent (4/1,000) or greater is unacceptable and will result in disposal of that lot. By way of comparison, FDA tests latex gloves in a similar manner but the acceptable standard is only one-tenth that for condoms (i.e., a 4 percent threshold for failure).

Latex condoms can deteriorate with aging and become substandard. Product degradation is affected by many variables including storage temperature (either temperature extreme accelerates aging), packaging material, and ozone concentration. In at least one instance, a lot which had passed manufacturer and FDA testing later failed a state Health Department screen. Warehouse storage at subzero temperatures was felt to be responsible.

The Navy obtains its condoms (NSN 6515-01-266-3802) through regular federal supply channels. A request for bids to supply condoms is issued by the Defense Personnel Support Center (DPSC), Philadelphia, PA, several times each year. These condoms must meet the ASTM standard described above and additional requirements as listed in Commercial Item Description A-A-53641 (including latex construction, a 52 mm width, a reservoir tip, and lubrication with Nonoxynol-9). Particular brands are not specified. Because the contract is issued several times each year, it is possible to have multiple brands of condoms from more than one manufacturer in the federal supply system at any given time. There is no single "Government Issue" condom.

After purchase, condoms are distributed to the four Defense Logistics Agency (DLA) depots for subsequent supply to the armed services. From DLA depots condoms are moved to Naval Supply Centers. They may then be sent directly to individual Navy commands or may move to other supply facilities (such as Naval Supply Depots or supply ships) on their way to individual commands. Additionally, condoms may also be obtained locally by "open purchase."

Essentially, "Navy" condoms are the same product as commercially available condoms in the United States. It is clear, however, that condoms do occasionally break (see Consumer Reports, March 1989) and rarely have there been formal complaints from military activities reporting excess breakage. One small command recently initiated a complaint based on 4 condoms with obvious holes and 20 personnel reporting breakage from a supply of 288 condoms. This was investigated by DPSC, with testing of condoms from the involved lots done by FDA. The condoms did, in fact, fail these tests. It is unclear if this represents a manufacturing defect or perhaps improper storage as the involved lots were stored together.

The DPSC is responsible for investigation of possible defective supply items including condoms. Suspected product deficiencies should be reported to DPSC with a Standard Form 380 Reporting and Processing Medical Materiel Complaints/Quality Improvement Report. Additional information about the initiation of product complaints can be found in the Navy Medical and Dental Materiel Bulletin (NMDMB), published monthly by the Naval Medical Logistics Command, Fort Detrick, MD, or in BUMEDINST 6710.63A.

In summary, there is no single "Navy Issue" condom, and Navy condoms are representative of those commercially available. Individual episodes of breakage clearly occur with many brands of condoms, and rarely a large group of issued condoms may be substandard. Medical Department personnel should ensure that condoms are properly stored and used prior to the expiration date. Isolated reports of breakage are not unusual (especially when interviewing STD patients) and should not cause immediate concern about the quality of the condoms. Clinicians should, however, be aware of the remote possibility of a defective lot and of the procedure to initiate a Medical Materiel Complaint if there appears to be a pattern of widespread condom failure. □

Drs. Weiss and Olson are assigned to the Infectious Disease Division, Internal Medicine Department, Naval Hospital, San Diego, CA 92134. Dr. Brodine is with the Health Sciences and Epidemiology Department, Naval Health Research Center, San Diego, CA 92138.

Marco Polo in the Land of the Pharaohs

Face pressed to the oval airplane window, I probed the desert for my first glimpse of Cairo and the Pyramids. The lush green of the Nile Delta had already given way to a featureless desertscape blurred by a dun-colored haze. As we began our landing descent, blocky, tan-gray apartment houses suddenly appeared,

looking like they had erupted from the desert floor. I strained my eyes. Where were those ancient wonders—the Pyramids? The sun had already set and I had to be content that a lifetime of expectation could await the dawn.

Next morning, just beyond my hotel, first light yielded those magnificent monuments to long dead

pharaohs. The exotic crying chant (recorded, I later learned) of the muezzin calling the faithful to prayer had roused me. A very yellow sun was casting its first rays on the rough sloping face of the 5,000-year-old Great Pyramid of Cheops and the sight was sensational.

I had come to Egypt representing

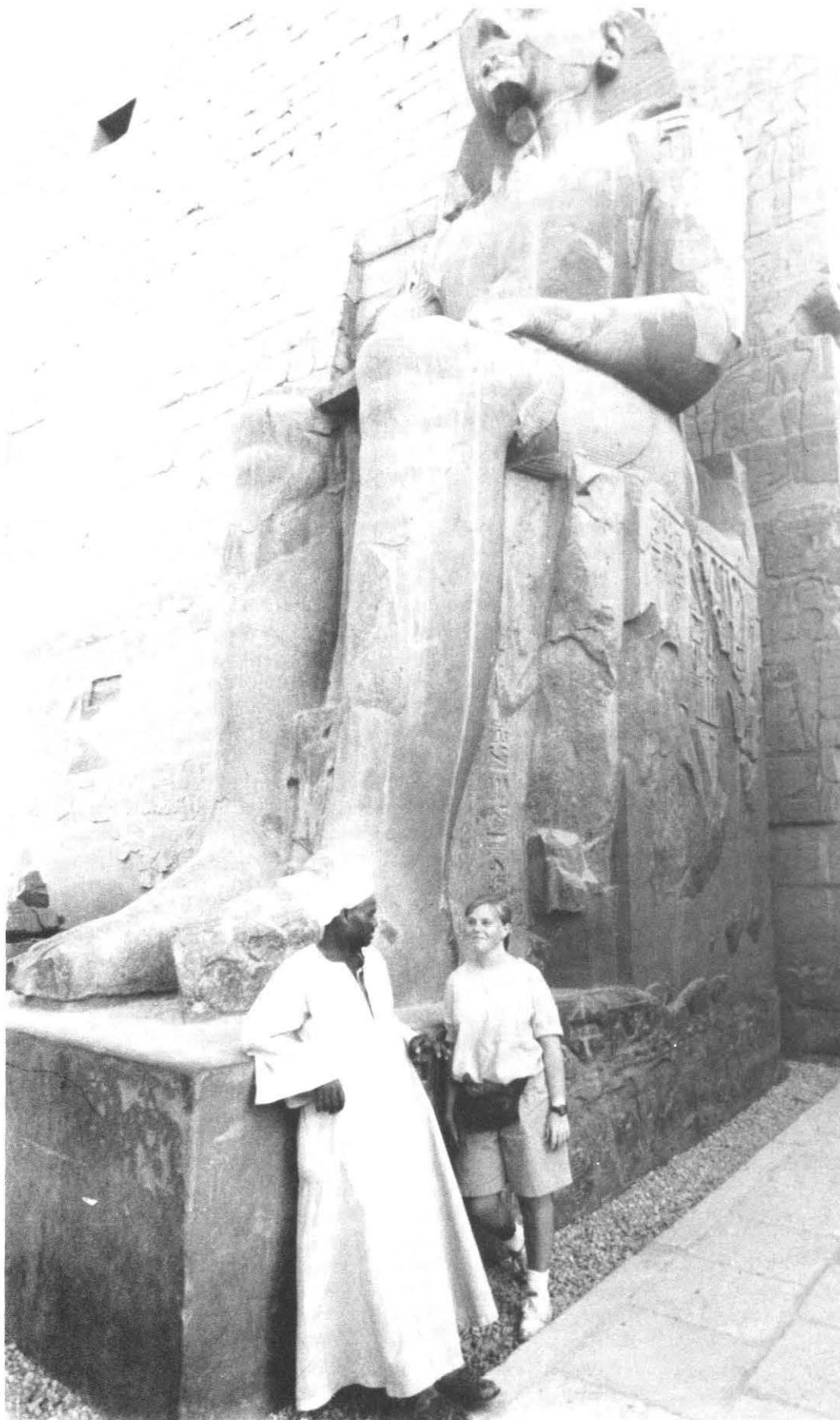
Marco Polo participants use local transportation to see the Pyramids.



the Navy Medical Department as a member of Project Marco Polo, a joint educational program sponsored by the Oceanographer of the Navy and the National Geographic Society. The Navy Medical Department had arranged a tour of its world renowned Naval Medical Research Unit No. 3 (NAMRU-3), and I was to present lectures on ancient Egyptian medicine and the history of Naval medical research in Africa.

Project Marco Polo, aptly named for the 13th century Italian adventurer and explorer, was conceived as a way of revitalizing student interest in geography and science. Evidence has shown that these disciplines have fallen on hard times in recent years. Twenty percent of Americans cannot identify a single country on a map of Europe, one in four is unable to find

Photos by Pat Lanza



North Carolina's Kim Sampson practices her Arabic at the Karnak temple.





Alaska's Brant Oliphant takes a sun sight with sextant.

the Pacific Ocean, and one in seven finds it impossible even to locate their own nation! In science, American students fall far behind their foreign counterparts.

"How can the Navy remain a vital force working with the world toward mutual goals if our own ranks don't understand the peoples of other nations, their traditions, cultures, and resources?," pointed out RADM Geoffrey L. Chesbrough, Oceanographer of the Navy. Also recognizing that the modern Navy depends on well-educated recruits, the Chief of Naval Operations gave his support to the first Marco Polo expedition over 3 years ago. Since then, the program has flourished.

In the summer of 1990 two students and their geography teachers flew to Indonesia to learn that nation's geography and culture. They then boarded a U.S. Navy hydrographic survey ship and helped survey the coastline of the Indonesian archipelago, learning the science of the oceans at the same time. That prototype expedition was so successful that the following year 12 teachers and students embarked aboard another survey vessel, USNS *Wilkes* to investigate the Kuroshio Current near the Japan Trench.

Summer 1992 found USNS *Chauvenet* homeward bound after having completed coastal survey duty in the Arabian Sea. Project Marco Polo

would take advantage of that homeward bound journey. The trip would be a voyage of discovery for 35 students and teachers. They would fly to Egypt to absorb the geography and history of an ancient land, and then would learn science by doing science with the Navy's Oceanographic Unit 4, embarked aboard *Chauvenet*.

Discovering Cairo

The week before meeting the ship, Project Marco Polo's students and teachers sampled Egypt's geography, ancient history, and the rich culture of the largest nation in the Arab world. We explored Cairo, a bewildering city of sights, smells, and sounds, with its skyline interrupted by mosques and minarets, bazaars, narrow alleys, the ubiquitous smell of dust, and traffic that would make a New York City cab driver weep. Michigan teacher Wayne Kiefer could not get over the ". . . camels, horses, burros, cars, and very crowded buses, a black goat that looked down on us from the roof of a three-story building, and a camel and a horse tied to a Volvo dump truck. And it's all perfectly normal, just not to us," he observed.

But it was more than the physical Cairo that opened students' eyes to the reality that people make a culture. Even the youngest quickly learned that price tags don't mean much in the Middle East and that shrewd bargaining is

a way of life. Sixteen-year-old Roberto Rodriguez, quick to make friends, found Egyptians enamored of his country. "I met a man who said his lifelong dream was to see the White House! Here we are in Egypt for the Pyramids and the temple of Karnak, and this man wants the White House of all places!"

Fathi Yehia, a former curator in the Egyptian Museum, escorted students and teachers through the largest collection of ancient Egyptian antiquities on earth. They saw up close the splendor of what is considered to be the richest archaeological treasure ever unearthed—the contents of Tutankhamen's tomb. They went to the Pyramids; some climbed the hot, narrow shaft to the center of the Great Pyramid, where they found the now empty sarcophagus of Cheops. This mausoleum of Cheops was not the set of a Hollywood spectacle, but an engineering marvel erected on the desert sands by thousands of laborers nearly 5,000 years ago; 2.3 million limestone blocks, each weighing 2.5 tons were cut and manhandled into position without benefit of iron, steel, or pulley.

We went south from Aswan in southern Egypt to behold one of the greatest monuments to ego ever constructed—the temples at Abu Simbel carved from solid red sandstone by Ramses II in Moses' time. By contrast, we walked atop the Aswan High Dam, one of the largest public works projects of modern times. With Fathi Yehia as our guide, we traveled down the Nile to Luxor, Karnak, and the Valley of the Kings, where Howard Carter found the boy king, Tut, in 1922.

But merely seeing all the glory that was Egypt was just part of what this Marco Polo expedition was about. There were lessons to be learned about geography, history, and the culture and traditions of the Islamic world. How had the building of the Suez Canal and the Aswan High Dam



U.S. Navy photo

USNS Chauvenet (TAGS-29)

affected Egypt's environment and economy? Evening study sessions focused on the Muslim religion, the geography of the Nile Valley, the Egyptian hieroglyphic alphabet, and medical practices in the time of the pharaohs. The latter set the stage for a tour of the U.S. Navy's Medical Research Unit No. 3. There, Marco Polo participants witnessed dramatically and firsthand how disease has affected the face of a continent and how scientists are working to understand and cure ailments that have sickened Egyptians and other Africans for millennia.

NAMRU-3

One of the Navy's and the National Geographic Society's concerns on the expedition was the health and safety of its participants. This year's trek promised to be a rigorous journey in searing Egyptian summertime heat. Also to be considered was a host of other maladies that can afflict travelers to a developing country. The Navy Surgeon General saw that HMCM Terry Thurman, NAMRU-3's Command Master Chief, accompanied Project Marco Polo throughout Egypt. (See sidebar) Thurman's commanding

Minnesota's Brandon Mattison lowers a bottom sampler to the floor of the Aegean Sea.





Sara Kim from Minnesota and NAMRU-3's skipper, CAPT Richard Hibbs examine a specimen from the lab's collection.

officer, CAPT Richard Hibbs, MC, invited us to visit NAMRU-3 while in Cairo and this proved to be one of the highlights of the trip.

If some were expecting a typically dry government briefing with requisite slide show, Marco Polo's teachers and students were in for quite a surprise. CAPT Hibbs gathered us in an auditorium, but his brief was just that, a few moments to introduce one of the world's premier medical research facilities. Then all got to see what NAMRU-3 is famous for—basic science and clinical research.

For the last 46 years NAMRU-3's scientists have been studying infectious diseases endemic to the Middle East and developing methods for their diagnosis, treatment, prevention, and control. Clearly, much of this work has military relevance; the U.S. pres-

Duty in Egypt

HMCM Terry Thurman, USN, is assigned to NAMRU-3 in Cairo as Command Master Chief. He accompanied Project Marco Polo on the Egyptian leg of the expedition, where Navy Medicine interviewed him about his work.

Photo by the Editor



HMCM Terry Thurman

Navy Medicine: What are some of the current programs NAMRU is working on?

HMCM Thurman: One of our most important programs concerns the prevention of schistosomiasis. Our scientists are also investigating the incidence of HIV in Egypt and other African countries. The prevention and cure of diarrheal disease is another priority. Our staff also works with the Abbassia Fever Hospital, right next door to our facilities, seeing patients with meningitis, TB, typhoid, and other diseases you just don't see in the United States. It gives NAMRU a chance to study these diseases and also benefits the Egyptian Government. Much of our work is a co-operative effort. All our protocols must be approved by the Egyptian Minister of Health. We cannot simply go out and do a survey without the permission of the Egyptian Government.

I understand NAMRU is working on a special topical cream that will help prevent schistosomiasis.

The Army is the lead service for infectious disease for DOD. They are developing the cream but we are testing it for them on a group of farmers and other people who work in the Nile Delta who are always in contact with the water. They apply the cream to their skin, the idea being that it may prevent the parasite that causes schistosomiasis from entering the skin.

How many enlisted are there at NAMRU?

We have 21 enlisted in the command right now including one Army veterinary tech assigned to us.

What about scientists?

There are both Egyptian and American scientists—microbiologists, entomologists, an Army

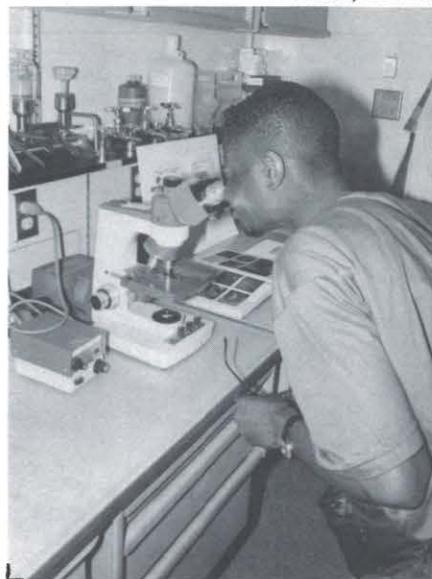
ence in Somalia is a case in point. Medical researchers and practitioners from all branches of the U.S. Armed Forces work alongside Egyptians trying to unlock the mysteries of vector-borne diseases such as leishmaniasis, and schistosomiasis and bilharzia, parasitic afflictions borne by snails and existing in Africa for thousands of years. Indeed, schistosomiasis was not uncommon in Egyptian antiquity. Ancient hieroglyphic medical texts discuss the disease and prescribe herbal cures; even mummies have been found to harbor the parasite. Modern Egyptian irrigation practices perpetuate schistosomiasis. Waterborne snails release parasites and await the unsuspecting person who wades into an infested irrigation canal. Among other projects, NAMRU-3 scientists are currently testing a topical cream that may

provide a barrier to these parasites.

Beyond what they learned about tropical diseases, Marco Polo participants talked to researchers about other aspects of NAMRU's work, receiving briefings on molecular biology and, in the medical zoology lab, observing a multitude of exotic animal species indigenous to Africa.

We also learned why NAMRU-3 is held in such high regard by the Egyptian people, and why the laboratory continued to operate in Cairo despite the 7-year lapse in U.S.—Egyptian diplomatic relations following the Six-Day War in 1967. What has been good for the U.S. military has benefited Egyptians manyfold. "We are known to the Egyptian medical community for our library, strong in infectious disease titles," CAPT Hibbs pointed out to his visitors. In fact, many Egyptian

Photo by the Editor



Phillip Peake of Michigan takes a microscopic look at one of NAMRU's specimens.

veterinarian, and a retired Army colonel on contract who is an infectious disease pediatrician. We also have clinical investigators and doctors who practice clinical medicine.

What are your duties at NAMRU-3?

My main duty is command master chief or senior enlisted advisor. I also run the MWR (Morale, Welfare and Recreation) program for the command. There are no support facilities to rely on. Although we get some support from the Embassy, it's not like having a nearby base. We are a self-contained unit. We have to find creative ways to see that people are satisfied with the program.

How do you do that?

We try to get people together for activities as often as possible. We go into town for dinner, or go aboard one of the many boats that go up and down the Nile. At least once a quarter we try to get the command together. We have MWR-sponsored trips to places through-

out Egypt. We've done Nile cruises to Aswan and Luxor and trips to the Red Sea. We help fund recreation classes. And we try to keep enough equipment on hand so that people can go diving, camping, or play sports. In fact, the Red Sea is one of the best places in the world to go diving. I can drive there in my car in a few hours.

What are some of the advantages of being stationed in Egypt?

The best reason is that you will never get another opportunity like this in the Navy. It's not only because of being in Egypt, but also working at NAMRU. Here, we are only one person deep. You have a lot of responsibility and have an opportunity to make a major contribution to the command's mission.

As for Egypt, we live and work in a country where you will never be bored. There's always something to see and do. This country is nothing like what you find back home or in any place in Europe for that matter. Coming to a city of 15 million peo-

ple with a totally different culture and religion is an eye-opener and takes some getting used to. You see a lot of traffic—buses, cars, trucks, donkey carts, pedestrians—all in a square block area, all trying to go in the same direction at the same time. Tourists spend thousands of dollars to come here for the historic wonders. We see the Pyramids going back and forth to work. You can learn a lot about Egypt, the Middle East, and Africa.

I know that through diplomatic good times and bad, NAMRU has been allowed to remain in Egypt and function at what it does best. Why?

The Egyptian Government recognizes the value of having NAMRU here. What we do not only benefits the Navy and the U.S. military, but provides great benefit to the Egyptian people. It really boils down to the fact that medical research really does not have political or national boundaries. —JKH



North Carolina's Mike Snider (left) and Minnesota's Brandon Mattison plot a course through the Suez Canal.

medical students have earned their advanced degrees by basing theses and dissertations on NAMRU's research projects.

Learning that NAMRU-3's facilities have served as a training ground for Egyptian researchers and physicians inspired Marco Polo's students. Several, whose interests already leaned toward the biological sciences, expressed the desire someday to become scientists themselves.

Aboard *Chauvenet*

From Cairo, we headed east across the barren desert following what many biblical scholars believe was the trail of the Exodus. In Port Suez, at the southern end of the Suez Canal, the USNS *Chauvenet* awaited us. Although it was past midnight when we boarded

ferries to the anchorage, *Chauvenet's* illuminated white hull glowed in the blackness; her entire crew lined her rail in welcome.

By the time we awoke next morning, a steady throb of engines told us we were already underway for an all-day passage through the canal. Towns, irrigated fields, and a train that looked like a prop from *Lawrence of Arabia* passed on our port side. On our starboard lay the lifeless, unpopulated Sinai Desert. An hour before midnight, *Chauvenet* cleared the canal and set a course northwestward toward the Aegean Sea and Greece.

Youngsters from inland Michigan and Minnesota picked up the sailor's lingo and, like seafarers of old, began to scan the horizon for that first glimpse of land. For the next 10 days,

Chauvenet's Corpsman

Before it was deactivated last October, USNS *Chauvenet* (TAGS-29) was a coastal hydrographic survey ship operated for the Oceanographer of the Navy by the Naval Oceanographic Office. It was manned by a crew of merchant mariners and a uniformed Navy crew and several civilian scientists assigned to oceanographic duties. The 4,000-ton vessel was deployed in the Arabian Sea surveying and charting the coastlines of Saudi Arabia, Kuwait, and the United Arab Emirates.

Project Marco Polo boarded *Chauvenet* at the Egyptian port of Suez as the ship prepared to transit the Suez Canal on its homeward journey. While aboard, Marco Polo participants got to know HMI Gregory Peck, *Chauvenet's* independent duty corpsman, both as their teacher of shipboard first aid, and as the man who tended to their minor cuts, bruises, and occasional bouts with seasickness. Navy Medi-

cine spoke with HMI Peck about the unique aspects of independent duty aboard a naval vessel with a mixed civilian-military crew.

Navy Medicine: How long have you been aboard *Chauvenet*?

HMI Peck: I came aboard *Chauvenet* in February 1992 and realized I had a bit to learn. This is an oceanographic ship not a warship. Things don't work the same way on a ship with a mixed Navy and civilian crew. I belong to Oceanographic Unit 4, but I'm *Chauvenet's* corpsman. I answer to the CO of the Oceanographic unit because she's my commanding officer, but I also work for the ship's master and his crew.

Where is *Chauvenet* homeported?

In Gulfport, MS. It rarely, if ever, spends any time there. The underway time on this ship is incredible; we're constantly steam-

ing. It's not like other ships that might pull into Norfolk and sit pier-side with a nearby dental clinic and all the other medical care right there. This is very arduous independent duty. There's no one to turn to out here.

What makes this duty so attractive then?

I am the medical department. I've got a lot of responsibility and there's no one else on board who can do what I do. I'm a first class petty officer and a department head. You tend to develop a certain pride in helping your shipmates.

And you have both Navy and civilian shipmates. Does that cause any special problems?

To put things into perspective, my engineering, my deck, and my store departments are all civilians. The civilian crew is a bit more complicated to take care of than the Navy crew. In the Navy we have a strict overseas screening policy that mandates that everyone out here has to be healthy. It doesn't work that way with my civilians.

students and teachers became part of the crew. They learned to navigate by sextant and chart, stand watch on the ship's bridge, hoist signal flags, and tie a good Navy knot. *Chauvenet's* corpsman, HM1 Gregory Peck, held daily classes on shipboard first aid, dispensing his knowledge with wit and wisdom. (See sidebar)

As our vessel sailed into cobalt-blue Greek waters, there were scientific duties to perform. From a motor lifeboat, students towed biological nets to harvest phyto and zooplankton, examining them later by microscope in the ship's wet lab. From *Chauvenet's* fantail, other students scooped samples off the rocky sea bottom. On the helo deck, students launched weather balloons and ran topside to monitor incoming meteorological data. One

excited student wrote about it in her journal that night. "The weather balloon I launched today registered data on the ship's computer up to 39,000 feet before it popped!"

Working in shifts, everyone got a chance to go ashore and help set up a trisponder site along the Peloponnesian shoreline to position the ship for survey work, *Chauvenet's* prime duty.

On our last day at sea, following an awards ceremony for the crew, LCDR Kathy Garcia, commanding officer of Oceanographic Unit 4, ordered the "Homeward Bound" pennant hoisted from the ship's mast. It was a bittersweet gesture. As the 54-foot-long ribbon floated aft on the wind, all of us already knew that this was the ship's final journey. Upon returning home to

Gulfport, MS, she would be deactivated. Nevertheless, *Chauvenet*, the floating schoolhouse, had provided some grateful students and their teachers a week to remember.

One student, Sara Kim, felt profoundly changed by the Marco Polo experience. "I'm only 13, but I've already seen a lot more than most people will ever see in their lifetime, thanks to the National Geographic Society and the Navy. I think that through this trip I can really help others understand the importance of learning about geography. Kids like me who have lived geography will bring alive these places to others."

Project Marco Polo had indeed fulfilled its primary mission. It had given everyone a new perspective on their world that would last a lifetime. —JKH

Photo by the Editor



HM1 Peck teaches shipboard first aid to Alaska's Berthanina Florimont. The "patient" is Sara Kim from Minnesota.

What kinds of things do you run into?

Some of the crewmembers are 61 years old. Some are even taking cardiac medications, something they wouldn't be allowed to do and sail with the Navy. But their union doctor says they are fit for sea duty. I also have a lot of hypertensive patients on board and I have to monitor them closely, checking their blood pressure and medica-

tion regularly. Many have hearing problems associated with aging and working for years without adequate hearing protection.

Prevention education is really my best tool out here. If I see someone working without protective eye glasses or earplugs, I'll tap them on the shoulder and that usually does it.

What do you do about dental emergencies?

I'm capable of performing emergency dental work and I've done it quite a bit. I have a tray with filling materials, epinephrine, lidocaine, temporary crowns, etc. If a patient needs to see a dental officer I have to wait until we might rendezvous with a carrier or encounter one in port. If there's an emergency that can't wait, I can send a patient to a civilian dentist in port.

What's the most unusual case you've ever encountered out here?

That would have to be the camel bite. The report was that an Omani fisherman had been attacked by a shark. When the man came aboard,

he had a diesel fuel-soaked rag wrapped around his entire forearm. I knew it was going to be a bad story from then on. When I got him to sickbay, I finally learned that the 23-year-old man had been bitten by a wild camel he had tried to saddle and ride. I found three full thickness lacerations on the posterior and anterior aspects of his forearm. The camel had apparently released his bite and caught him again further down where he now had a 4-inch full thickness laceration. I spent about 4 hours working on those wounds, using about a liter of saline to clean them. He took at least 35 sutures but the wounds approximated very nicely. I gave him a tetanus shot and put him on an antibiotic. I pleaded with him to come back for a followup; I didn't think I'd ever see him again. He did come back. Everything looked great. There were no signs of infection and he had full range of motion in his fingers. He returned again, I removed the stitches, and the scarring was minimal. I've really seen some peculiar things over here, but that was the strangest. —JKH

Naval Medical Research and Development Command Highlights

• Measuring Blood Analytes

Current methods of performing laboratory tests for the rapid evaluation of a critical care patient require analyzers, reagents, and the procurement of a blood specimen from the patient. Performing these tests in the field or operational environments is logistically very difficult. A NMRDC-sponsored Small Business Innovation Research Project is developing a promising solution to this problem. Investigators of Biotronics Technologies, Inc., Waukesha, WI, are working with researchers at the National Naval Medical Center (NNMC), Bethesda, MD, in the development phase of an analyzer that will use infrared light reflectance from skin to provide results for blood analytes. A study, conducted at NNMC on 250 subjects from whom infrared light spectra and correlating chemistry profiles were collected and compared, has provided data for the computer algorithms that will be used in the development of the final prototype analyzer. The analyzer, which will be of a portable size, will analyze infrared light spectra that is reflected from the patients skin to give results for sodium, potassium, chloride, carbon dioxide, glucose, hematocrit, and blood urea nitrogen. Upon completion, this project will provide the solution to overcome the difficulties of performing blood analyte levels in the field or in operational environments, and will allow rapid, noninvasive evaluation of patient status. For more information contact CDR J.R. Beddard, MSC, NMRDC Small Business Innovation Research Program Coordinator at DSN 295-0885 or Commercial 301-295-0885.

• Replacement Tissue for Skin Grafting

Open wounds and burns are a major problem in combat situations, frequently leading to infection and further complications, especially when large areas of the epidermal surface are burned or scarred. Future combat casualty care scenarios would have a field surgeon quickly and safely close the wound with cryogenically stored ready-to-use sterile sheets of epidermal cells attached to an underlying dermal equivalent. Navy-sponsored researchers at Case Western Reserve University School of Medicine, Cleveland, OH, are developing a skinlike tissue using keratinocytes, a basal lamina, and dermal fibroblasts as a replacement tissue for skin wounds. They are also investigating the technology for transferring genetic information into skin cells to enhance the therapeutic value for grafting and reduce rejection by the host immune system. In addition, researchers are

planning to design DNA vectors that can carry biologically important genes into keratinocytes. The availability of such a set of vectors would potentially make it possible to express genes encoding antibiotics in the cells. This would render the cells resistant to bacterial infection, a further advantage in combat situations. The number of potentially useful genes that could be inserted into the cells with such a vector system is unlimited. For more information contact CDR P.D. Kent, MC, NMRDC Research Area Manager for Combat Casualty Care at DSN 295-0880 or Commercial 301-295-0880.

Noninvasive Physiologic Monitors

The early detection of infection is essential to the safety of military personnel when faced with delayed medical evacuation. For personnel stationed in conditions of constant environmental stress (e.g., climatic extremes, undersea habitats, space evolutions, endemic disease) frequent monitoring of salivary chemistry may be a useful alternative to venipuncture.

Salivary components which may provide early warning signals of physiologic compromise were evaluated by researchers in the Clinical Investigation Department at the Naval Dental Research Institute (NDRI), Great Lakes, IL, in a collaborative study of acoustic stress effects in humans at the Naval Submarine Medical Research Laboratory, Groton, CT. Salivary C-reactive protein (CRP) and cyclic AMP-dependent protein kinase regulatory subunits (cARP) showed changes associated with catecholamine release. CRP and cARP are indicators of inflammation and metabolic dysfunction, respectively.

While it may be of forensic interest that the cARP protein banding patterns were unique to each subject (N=21), this evidence of pleiomorphism suggests that cARP may also have protein isoforms specific to diseases which trigger immune response. CRP, as an "acute phase" protein, may also show disease-specific pleiomorphism. Both cARP and CRP may respond to the immunologic stimuli of infection by showing genetically reprogrammed disease-specific protein isoforms. Such isoforms could provide monoclonal antibodies for early disease detection by salivary ELISA or Western Blot tests. NDRI has proposed expanded studies to explore these hypotheses. For more information contact CAPT S.A. Ralls, DC, NMRDC Research Area Manager for Dental Research at Commercial 202-653-0463.



Navy Medicine

November-December 1942

Jennifer Mitchum

By the time the Allied Expeditionary Force, under the command of LTG Dwight D. Eisenhower, landed in French North Africa at Casablanca, Oran, and Algiers on 8 Nov, the U.S. had been at war for almost a year. It had been 11 months and a day since Pearl Harbor.

Until now, U.S. forces had mostly been deployed in the Pacific, with minimal activity occurring in the other theaters. Now, the U.S. would fight on two fronts simultaneously, and the war would literally become global.

Viewed by one observer at BUMED "as the greatest single [landing] accomplishment of the war," (1) Operation Torch represented the largest assembly of Allied ships and aircraft so far. It was the first time the Allies used joint planning to forge a major operation, establishing a pattern for future invasions. Never intercepted by German patrols, the Allies increased the pressure on Axis forces in North Africa.

Hitting the beach at dawn, Allied troops met little French opposition for the most part. However, resistance

increased in the Casablanca area once the U.S. Army leading the Western Task Force landed. By the evening of 8 Nov, a ceasefire had been arranged and most fighting stopped. On 11 Nov, the Allies reached an armistice with Vichy French authorities and complete occupation of French North Africa had been accomplished.

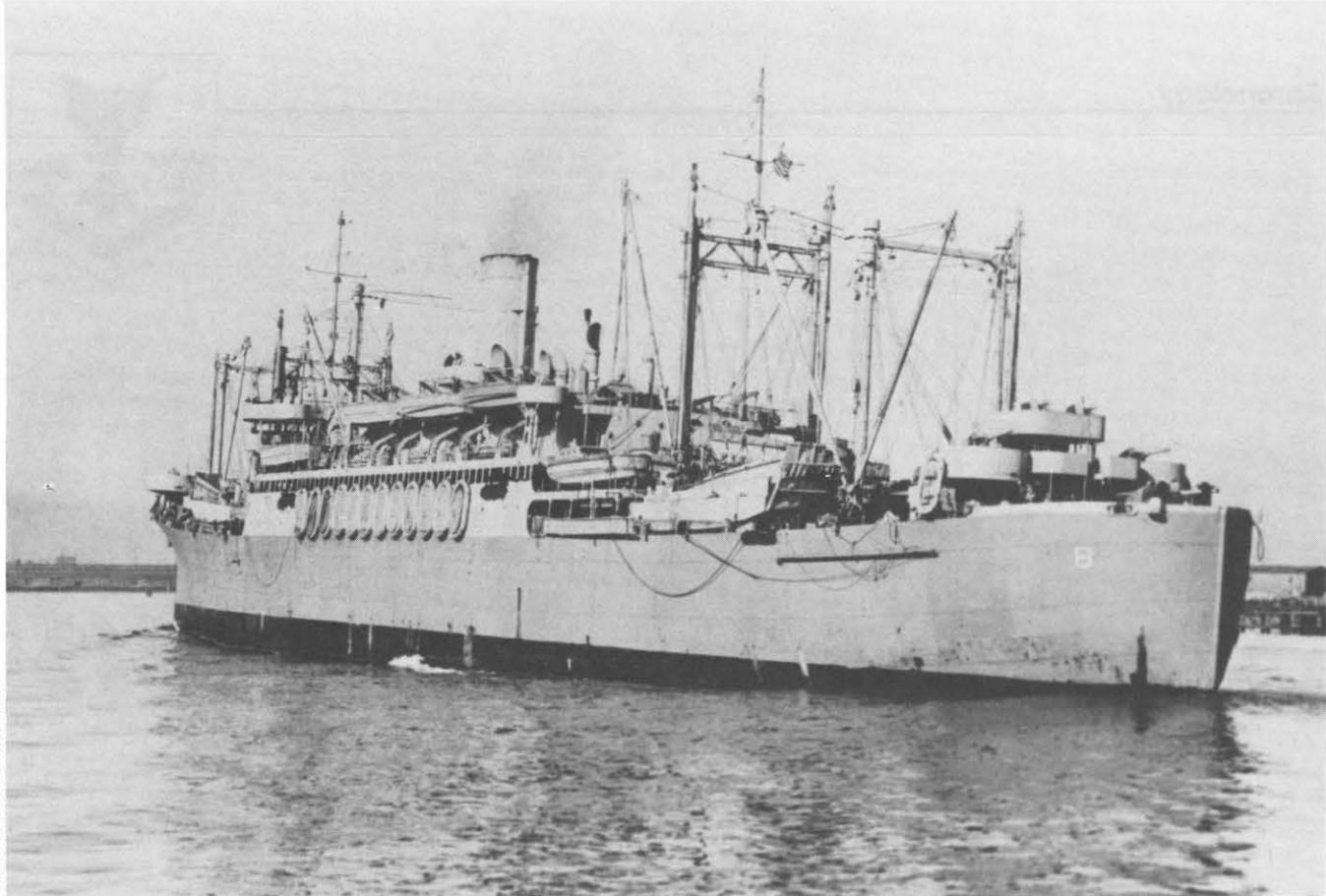
The Plan

A carefully drafted medical plan called for collaboration on the part of U.S. Armed Forces and other Allied medical personnel. Under the plan, medical responsibilities were delegated. For example, Navy medical personnel would treat all service personnel between the port of embarkation and the high water mark on the beaches in the Safi area of Morocco. This included evacuating and treating the wounded afloat.

Transports (APs) were to provide seaward evacuation, cargo ships (AKs) would receive less seriously wounded, and combat ships would care for their own. Transport "beachmasters" attached to shore parties

would be responsible for removing wounded from beach evacuation stations and placing them in boats with the assistance of medical personnel. Wounded were to be returned to their designated vessels. Incidentally, if Army personnel could return to duty within 30 days, they were not to be evacuated to transports.

Every 2 hours, regimental and battalion beachmasters were to inform transport commanders of the number of casualties requiring evacuation. In turn, transport personnel were to count wounded aboard and report how much space remained on each vessel. In addition, Navy medical personnel were not to evacuate wounded until assault troops had landed. There was an exception. Men wounded enroute to the beach were to be returned to transports. Army collecting and clearing stations as well as Army evacuation hospitals would be accessible to Navy medical personnel. Navy personnel were to care for the sick at naval dispensaries and use Army hospital facilities for patients requiring hospitalization.



Many wounded were evacuated and treated aboard USS *Harris* (AP-8) during the North Africa invasion in November 1942.

The Assault

Navy medical and other Navy personnel landed shortly after the Army assault troops. Medical officers and corpsmen accompanying convoys carried field medical kits and administered first aid on location. They then sent the wounded through the evacuation chain. Transports could carry several stretcher and ambulatory cases as well as several medical personnel units. For example, USS *Harris*, one of the first transports to complete disembarkation, had space for about 200 beds and 1,000 ambulatory casualties.⁽²⁾ Assigned to *Harris* was a beach party of 1 medical officer and 11 enlisted men; a main battle dressing station of 2 medical officers, a dental officer, and 15 hospital corpsmen; a forward battle station manned by 2 medical officers and 8 corpsmen; and an after battle station consisting of 1 medical officer and 6 corpsmen.⁽³⁾

According to a *Harris* report, general care of casualties began about

one-half hour after landing at Safi. Corpsmen treated and evacuated about "five casualties from Blue Beach as soon as the assault waves were in" and before medical officers joined them.⁽⁴⁾ On 9 Nov, a communication system between medical personnel and ship and regimental beachmasters had been established. Then medical personnel set up a battalion aid station and moved casualties there and from that station to medical beach parties for transportation to ship.⁽⁵⁾

First day treatment aboard *Harris* consisted of applying powdered sulfonamides to wounds, of splints to fractures, and administering morphine via syrette. Twenty-six casualties were treated and evacuated. On 9 Nov, medical personnel evacuated the remainder of casualties on *Harris* to USS *Lyon* and USS *Calvert*. To reduce delay, they placed some wounded in returning boats and used a double litter lift raised by a single whip boom to transfer casualties from boats

to the ships. Casualties were placed on the port or starboard quarterdeck and later moved to the main battle station. All evacuations aboard *Harris* were accomplished without incident.⁽⁶⁾

Once ashore, medical personnel established facilities quickly. They set up a first-aid station in the port area of Safi on 9 Nov and a sick bay at Casablanca on 12 Nov. Subsequently, a group of medical and dental officers arrived in Casablanca on 18 Nov to establish a dispensary. They set up the dispensary in a clinic formerly operated by French physicians and surgeons on 7 Dec. The 54-bed facility, equipped with surgery and X-ray equipment, permitted medical and surgical teams to go to work almost immediately. Medical personnel used neighboring villas for additional hospital beds. At Fedala, three medical officers and eight corpsmen assembled a sick bay in a camel barn on the dock. Subsequently, the Navy established a dispensary at Fedala.



Business at this native canteen on Noumea, New Caledonia, thrived as ships came into the harbor after engagements with enemy forces.

Several afloat units provided facilities and reinforcements for shore activities. For example, USS *Thomas Stone*, a damaged troop transport grounded about 150 yards away from the beach at Algiers, served as an accommodating and receiving ship as well as a floating fortress, shooting down two planes. Its sick bay proved an invaluable addition to the U.S. Naval Dispensary established at Algiers; especially in the areas of surgery, dentistry, laboratory work, and radiology.

In the Oran area, sick bays had been set up for the Navy at Mers-el-Kebir and Arzeu and a dispensary at Oran, by 28 Nov. In a 28 Nov memorandum, CAPT J.W. Vann, MC, indicated that the medical plan had been carried out in most of its details.(7) However, the medical care of the Royal Navy and Merchant Marine personnel during their stay in port had not been included in the plan. CAPT Vann made recommendations on how to

handle them. By 21 Nov, several Army installations had also been established. These facilities were available for Navy medical use.

As a result of skillful planning which called for coordination of ship and shore activities and emphasized use of land-based medical facilities, little immediate seaward evacuation was necessary. The operation, however, was not without cost, with an estimated total of about 1,000 wounded and 1,000 KIA or MIA.

Guadalcanal

Although the U.S. Navy had been successful in holding the Solomon Islands, the Japanese intensified their efforts to cut American supply lines and reinforce their troops. They successfully achieved the former but not the latter. Their only means of reinforcement was the so-called "Tokyo Express," and U.S. submarines had been successful in sinking and damaging several resupply vessels. In addi-

tion, the Navy and Marine Corps were pushing the Japanese back, and U.S. air defenses on the island had greatly improved as more airfields sprang up around Lunga.

In turn, the Japanese regrouped and put together a mega force of approximately 60 ships, beginning an amphibious offensive by the afternoon of 9 Nov. On 12 Nov, a new phase in the Battle of Guadalcanal opened as the Japanese launched an aerial attack on American transports which were unloading troops in Lunga Roads. The battle ended on 15 Nov. Although the U.S. suffered great losses in warships, the Japanese withdrew. Subsequently, the Battle of Tassafaronga commenced at night on 30 Nov off Tassafaronga Point, with enemy torpedoes heavily damaging U.S. vessels. Nevertheless, on 31 Dec, after a 5-month blood bath, Emperor Hirohito gave Japanese commanders permission to evacuate Guadalcanal and accept American victory.

Air Evacuation

By 1 Dec, more casualties had been evacuated from Guadalcanal by air (2,879) than by sea (1,040).⁽⁸⁾ Sea evacuation proved less efficient because of the several stages involved. Casualties first had to be transferred via some form of shore-to-ship transportation (usually ramp or Higgins boat), and then put aboard the ship by hoist.

In December, the First Marine Division evacuated, and U.S. Army troops took over the area. Thus, evacuation of First Marine Division patients was set in motion. The ambulatory were discharged to their organizations. The remainder were grouped according to their organizations and

placed aboard the ship that would carry that group.

The Second Marines along with the Eighth, who came over from Samoa in November, remained on the island. The Second Marines had been in constant action for a period of 4 months, and the men were badly shaken by disease, fatigue, and casualties. Similarly, the Eighth Marines suffered from malaria and other ailments including filariasis, an ailment acquired in Polynesia.

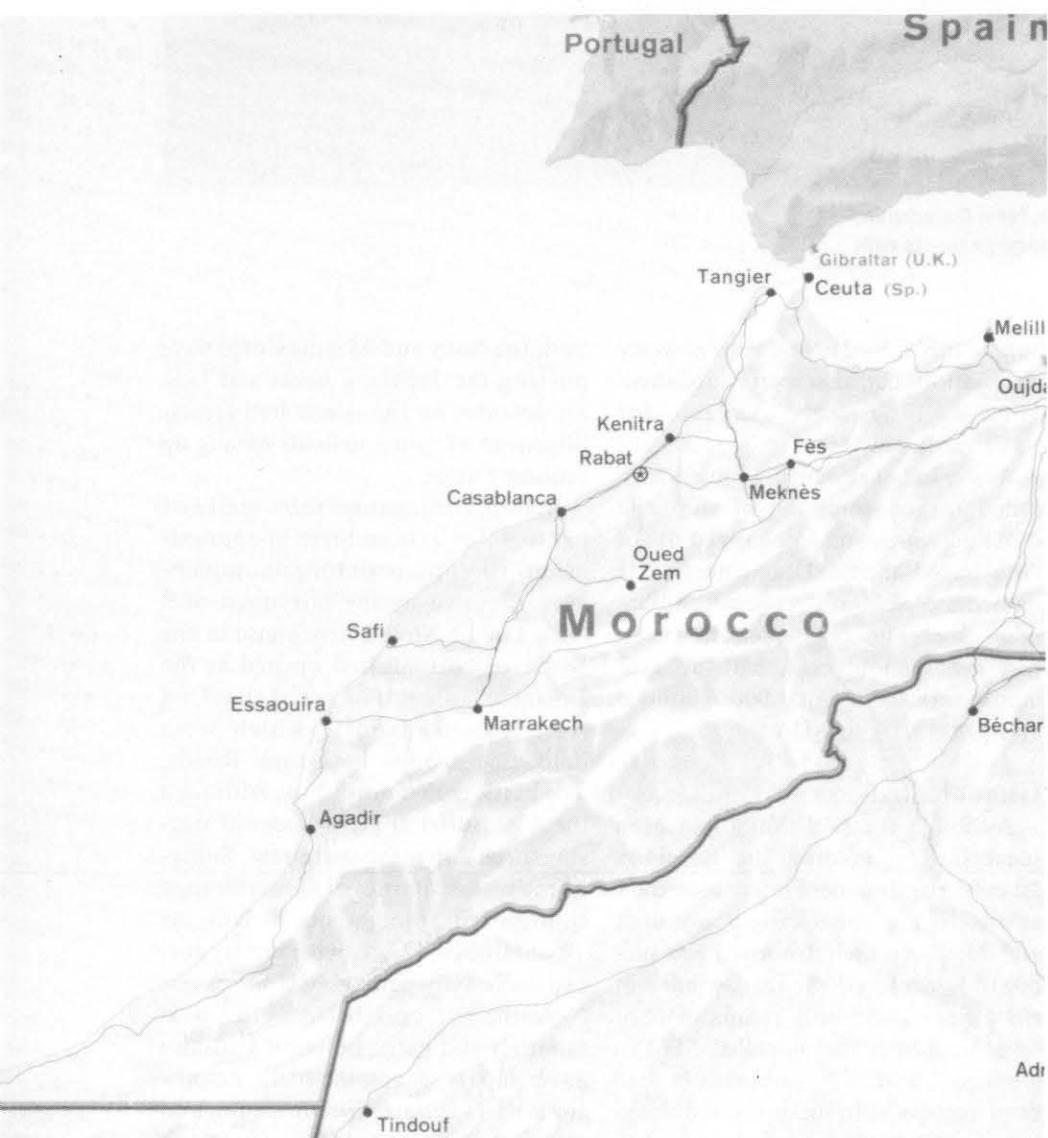
Malaria

Malaria proved to be a major problem throughout the Pacific. On Guadalcanal, the number of First Marine Division patients hospitalized for

malaria had nearly doubled the total number of malaria cases admitted in October, increasing to 3,212 from 1,941. In addition, malaria cases surpassed the total number (2,413) of those admitted for other diseases in November. From the start of the campaign in August to the end of November, 5,414 had been hospitalized for malaria and 7,667 for other diseases.⁽⁹⁾ Similarly, Base Hospital No. 2, Efate Island, New Hebrides, reported that 2,949 patients were admitted with malaria during the period of 4 May to 31 Dec 1942.⁽¹⁰⁾

Malaria was also evident in the Bilibid prisoner of war camp in Manila, where U.S. military personnel had been interned since May 1942. To assess the situation at the camp, the Japanese captors assembled a "Malaria Commission." This body, composed of four Army medical officers, from the Cabanatuan POW camp, arrived at Bilibid in November and met with CAPT L.B. Sartin, MC, commanding officer of the Bilibid Prison Naval Hospital. As the so-called "malaria conference" convened, a Japanese professor was there to lecture on the malaria situation and possible treatments. But instead of being informative, he only displayed his own ignorance. "Their [Japanese] medical knowledge and attitude is about that of our third year medical student," wrote CDR Thomas Hayes, MC, one of the doctors at the prison.⁽¹¹⁾ Therefore, only the rudimentary and commonly known facts about malaria were mentioned at the sham conference.

At some point, the Japanese took 20 malaria cases from Bilibid to their hospital to study and treat them. At the Japanese hospital, one of the patients died due to a diarrhea he had had prior to leaving Bilibid. The other 19 returned to the prison camp on 16 Nov looking splendid and fattened. They reported that in addition to their medicine, they were fed meat, good soup and vegetables, orange juice, and fruits. Moreover, they were taken for walks in the park each afternoon. Dr. Hayes noted that such treatment and



change of diet made their improvement inevitable. Dr. Sartin prepared a menu for the Japanese for the prison and suggested that the Japanese permit enough food so that other cases at Bilibid could likewise improve.(12)

Mobile Hospitals Kept Busy

As the war in the Pacific heightened, casualties streamed into U.S. Navy medical facilities. Cub One in Espiritu Santo, New Hebrides, admitted 4,175 patients, which included Army, Navy, Marine Corps, and Coast Guard personnel, during the period of 15 Aug and 31 Dec.(13)

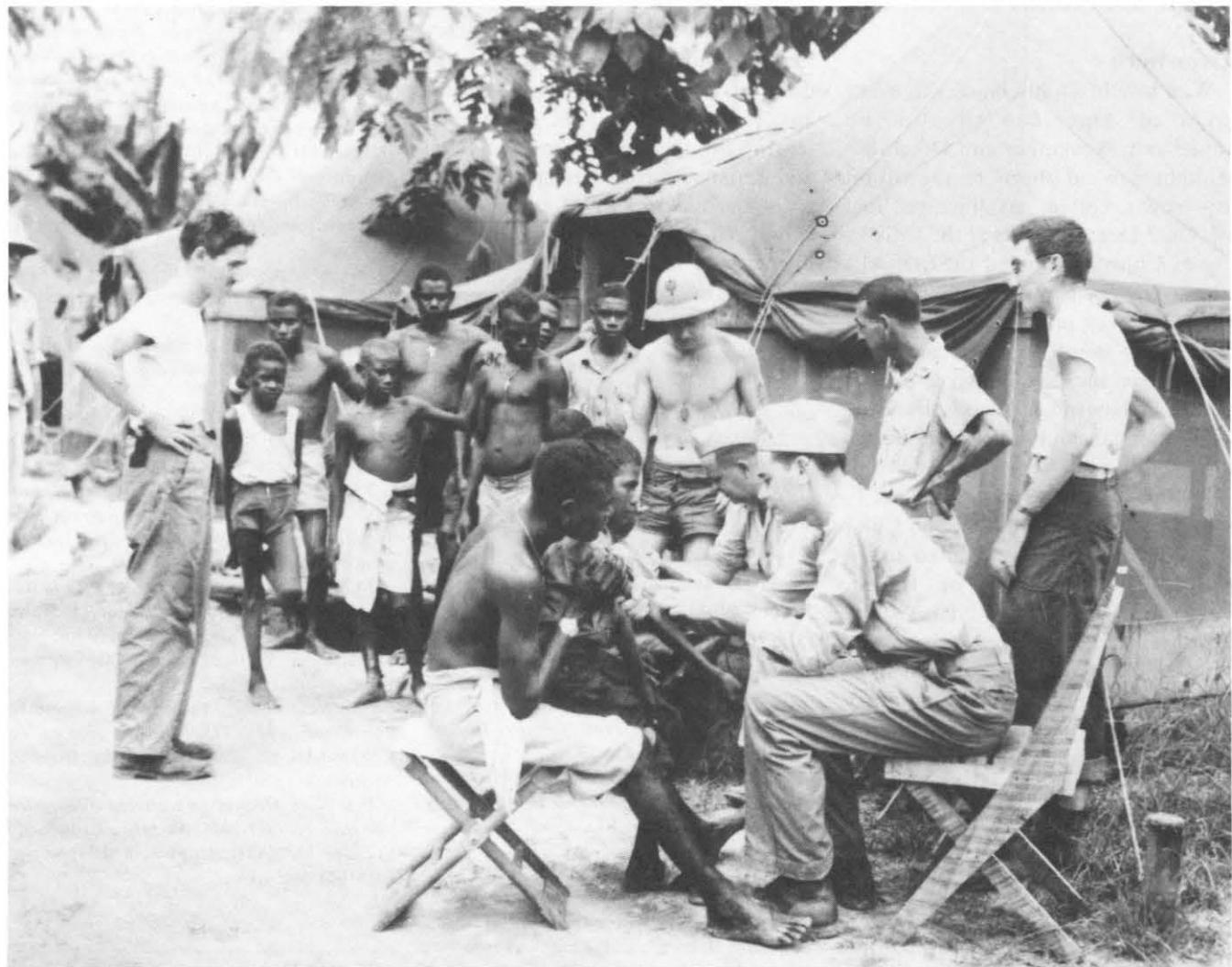
To meet the needs of the rising number of casualties being evacuated from other hospitals in the South

Pacific to Mobile Hospital 4 (Mob-4) in Auckland, New Zealand, expansion was underway at the 1,000-bed hospital. The original hospital had 41 prefabricated steel buildings. Expansion began on 16 new wards, additional barracks, a brig, storerooms, larger mess halls, administrative buildings as well as a neuropsychiatric ward. By December, the structures had been completed. Mob-4 took over the receiving barracks at the south end of what was called the Auckland Domain and converted them into a 1,000-bed convalescent hospital also in December.(14) The convalescent hospital absorbed overflow patients from the main hospital, freeing hospital beds for critical cases. In addition, a

civilian hospital nearby provided treatment and quarantine for the isolation of contagious diseases. Later, some additional buildings at a racecourse were used as isolation wards and some stables for a motor pool.

The types of injuries varied considerably with each incoming group of casualties. Initially, wounds and burns characteristic of sea battles and landing operations were encountered. Later, there were more compound fractures and land-mine injuries as land fighting on the islands increased.

On the other hand, at Mobile Hospital No. 6 (Mob-6) in Wellington, the majority of the patients suffered from compound fractures caused by gunshot or bomb fragments. There were



Native children receiving medical attention from Navy doctors in the Solomon Islands.

many chest injuries and multiple soft tissue wounds but relatively few abdominal and head wounds.

Mob-6 served as an evacuation hospital in many ways and every effort was made to speed recovery. Recreational and amusement facilities were used to the maximum. For example, hospital personnel formed a small dance band which entertained patients and often played at functions in and around Wellington, providing music for ships' dances and military camps. Amateur theatrical organizations also produced weekly concerts and vaudeville shows. In addition, New Zealanders contributed to patient comfort and entertainment. The Order of St. John and the New Zealand Red Cross Society supplied bathrobes, pajamas, slippers, and sweaters to the patients.

Elsewhere

War had brought changes in every facet of American life on the homefront. November and December brought new additions to the ration list—sugar, coffee, gasoline, and fuel oil. On 2 Dec, scientists at the University of Chicago initiated the first self-sustaining nuclear reaction, carrying out a key step in the development of the atomic bomb. As a harbinger of things to come, the Dravo Corporation of Pittsburgh, PA, completed the first American-built landing tanker on 14 Dec.

In Navy medicine, RADM Ross T. McIntire, Surgeon General and Chief of BUMED, was reappointed to an additional 4-year term on 1 Dec. Seventeen days later, President Roosevelt approved the rank of rear admiral for dental officers. In addition, nurses were granted temporary relative rank from ensign to captain, and increased pay for the war period plus 6 months. Sue S. Dauser, as Superintendent of the Nurse Corps, took the oath as the first captain in the Nurse Corps, becoming the first woman captain in the Navy. In the Marine Corps, the commandant approved the establishment of the Women's Reserve on 7 Nov.

Hospital construction and commis-

sioning continued at an accelerated rate as the average patient census continued to rise, reaching 13,274 for 1942.(15) This was almost double the June 1941 average of 7,723.(16) Hospitals were commissioned at Norfolk, VA, on 2 Nov; at Aiea Heights, T.H., on 1 Nov; at Norman, OK, on 15 Nov; at St. Albans, NY, on 24 Nov; and at Long Beach, CA, on 15 Dec. Mobile Hospital No. 5 (Mob-5), a 1,000-bed hospital in Noumea, New Caledonia, officially opened on 23 Nov. Mob-5 had received small numbers of patients prior to its official opening. On 19 Nov, a large draft of patients arrived at Mob-5 from the Guadalcanal battle area.

The Navy also established the first official convalescent hospital, the purpose to care solely for patients who required no further "treatment other than a change in climate, rest, good diet, psychotherapy, or physiotherapy."(17) In August 1942, W. Averell Harriman, then government official and ambassador to Russia from 1943 to 1946, had offered his estate to the Navy. The Navy commissioned the property as USNCH Harriman, NY, on 16 Nov.

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4. *Ibid.*, p 9.
5. Sometimes regimental officers forfeited the 30-day waiting period for evacuation and sent wounded to transports although their conditions did not warrant it.
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7. *Ibid.*, p 12.
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Cognitive Behavioral Treatment of Panic Disorder With MVP

LT Mark A.D. Long, MSC, USNR-R
Robert L. Eufemia, Ed.D.

Mitral valve prolapse (MVP) is a medical condition associated with a number of symptoms similar to anxiety, e.g., palpitations, fatigue, light-headedness, tachycardia. It has become one of the most frequently diagnosed heart valve problems in the general population.⁽¹⁾ There have been varying prevalence rates reported, but the Framingham study found a 5 percent overall rate.⁽²⁾ The problem is that the symptoms sometimes are not only physically and psychologically overwhelming (relation to anxiety), but often individuals with MVP also have panic disorder.

Using the diagnostic criteria listed for panic disorder in DMS-III-R one can diagnose this condition even if there are MVP complications. Thus, individuals who meet both criteria can be overcome by having to understand that their distress is caused by physical and psychological factors. Some patients have difficulty in accepting the latter and equate it with being accused of having it "all in their head." To further complicate the situation, the vast majority of MVP cases can be considered as a benign cardiac condition,⁽¹⁾ and patients may be given the all too familiar "don't worry" advice. Thus, it is important for the clinician to know how to treat patients diagnosed as having panic disorder with MVP. This article outlines a short-term, practical treatment approach for such patients.

History

Both patients were single females. Linda, 20 years old, was employed full-time as a dental technician, while Dolly, 22 years old, was working part-time in a clerical position and full-time as a student.

Linda was referred by an emergency room physician to the mental health center. She had been to the emergency room a total of four times. On the third visit she was tested for MVP and when she returned for a fourth visit she was given the diagnosis of panic disorder without agoraphobia, axis I, and MVP, axis III, DSM-III-R.⁽³⁾ and a referral. Dolly was referred by her family physician. There had been

six visits to the emergency room and four to her family physician who gave her the same diagnosis as Linda and a referral. The purpose of the referrals was to help them deal with their panic attacks, learn to cope with environmental stressors, and the diagnosis of MVP.

Assessment

Linda was raised in an intact family and reported some separation difficulties with going to school (1st grade) but had a normal childhood free from psychic trauma. She did, however, experience panic attacks several times in junior and senior high school. These attacks usually occurred before major stressors such as oral presentations, big examinations, interpersonal difficulties, etc. While these events would not necessarily be viewed as traumatic or harmful, she viewed them apprehensively due to her cognitive interpretations; for example, "I will fail the exam," "I can never get along with people." Linda recently completed school and moved to a new area for her first professional position. She had never been away from home before the move and had recently began dating a young man, not entirely acceptable to her parents. These changes were major events to Linda and viewed as very stressful.

Dolly was raised in an intact family and reported no psychic trauma in her childhood. She, as did Linda, reported panic attacks before examinations and interpersonal difficulties. Dolly also recently moved out on her own for the first time. While she was a full-time student at a local university, she had the additional burden of having to support herself by working part-time. As with Linda, Dolly was exposed to some major life changes which she viewed as very stressful. She reported her symptoms as almost identical to Linda's description. Her level of fear and apprehension was slightly higher as measured by visiting her physician four times, and the emergency room two more times than Linda during a 1-month period.

Both patients were very reluctant to seek mental health treatment. They denied that there were any psychological

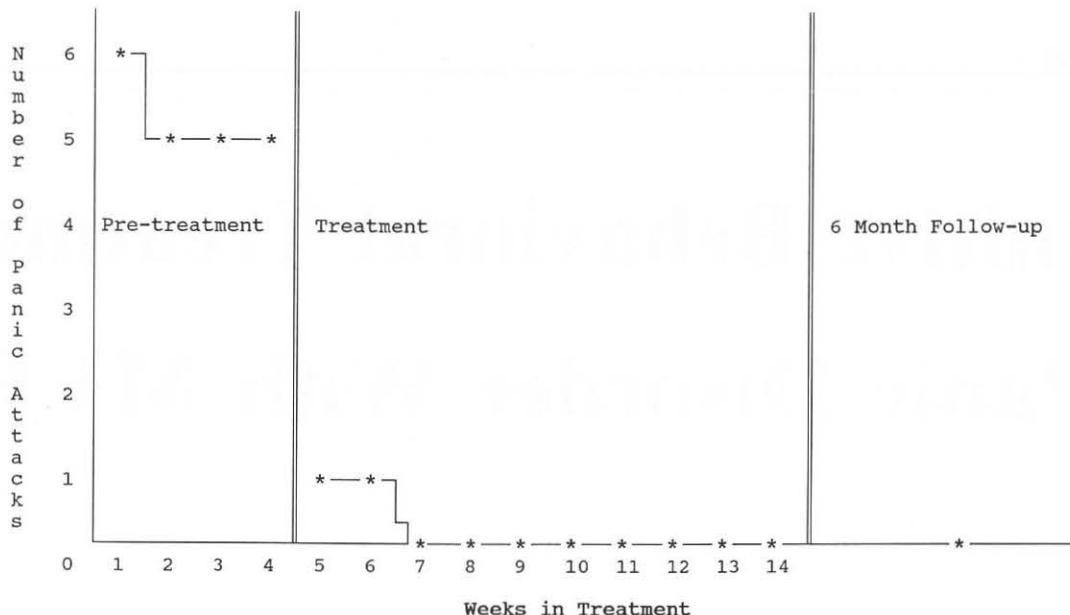


Figure 1. Linda's Data

problems responsible for their conditions. Neither patient would accept psychotherapy, but both were agreeable to short-term, cognitive behavioral treatment. Their willingness for accepting short-term therapy was that it was specific, time-limited, technological (i.e., resembling more of a medical versus mental health intervention by treating specific symptoms), and logical. They could easily see a connection between the attacks and the cognitive behavioral treatment. Both patients stated that this connection did not resemble the "sickness" stigma that they associated with psychotherapy. After an initial evaluation by the mental health staff the patients were diagnosed as axis I, panic disorder without agoraphobia, and axis III, MVP, DSM-III-R.

Treatment

Linda and Dolly were instructed to monitor their panic attacks in a daily log. The same clear and specific instructions were given to both patients to standardize measurement. Linda was given 11 weekly, 1-hour sessions of treatment while Dolly was given 14 sessions. These additional sessions were given because Dolly was initially more apprehensive and fearful than Linda, and had more visits to medical personnel for help with her attacks and MVP.

Education. The patients were first educated about panic attacks and MVP which included receiving materials on common symptoms (DSM-III-R criteria); key concepts to successfully dealing with panic such as acceptance, relaxation, passiveness, and common irrational beliefs that "panic can hurt one," and "one may not recover." They also received other educational material. (A full description of the educational materials can be obtained by writing to the first author.) Joint meetings were held with the mental health center's physician and psychologist, and the patient(s) several times during treatment. Each patient was seen individually, but treatment was identical. The physi-

cian reviewed the diagnosis of MVP and panic attacks as well as its causes, effects, and treatments. The psychologist discussed symptoms and causes of panic and how to treat it. Also, by giving the patients the instructional material in an outline format it was easy for them to comprehend the information. This approach is credited with the high degree of compliance.

Cognitive Behavioral Treatment. This phase consisted of a four-part program: (1) Deep muscle relaxation training was taught and prescribed to be practiced twice daily. (2) Strategies for dealing with panic attacks were taught in the educational component but were again emphasized from a cognitive model.(4-6) (3) Clear and specific instructions were given to practice the "panic techniques" described earlier in numerous settings for generalization; for example, at home, school, work (where circumstances allowed), sitting in traffic, and other situations in which the attacks may occur. (4) An intensive, but short-term, cognitive restructuring approach was used to teach the patients how they could gain control over these attacks through their thinking.

Treatment Outcome and Discussion

Results were fairly dramatic and successful. The number of panic attacks were reduced from a pretreatment mean of 5.25 and 6.25 per week for Linda and Dolly, respectively, to .75 and 1.25 during the first month of treatment, to 0 for both patients during the 6-month followup. The number of emergency room visits decreased from pretreatment means of 4 and 6 per month, Linda and Dolly, respectively, to 0 after treatment. In fact, Linda stopped going to the emergency room after only 2 weeks of treatment, while Dolly stopped after only 3 weeks. These significant changes were maintained during the 6-month followup.

Both patients showed increased control of their panic behavior and MVP condition. These reports also showed

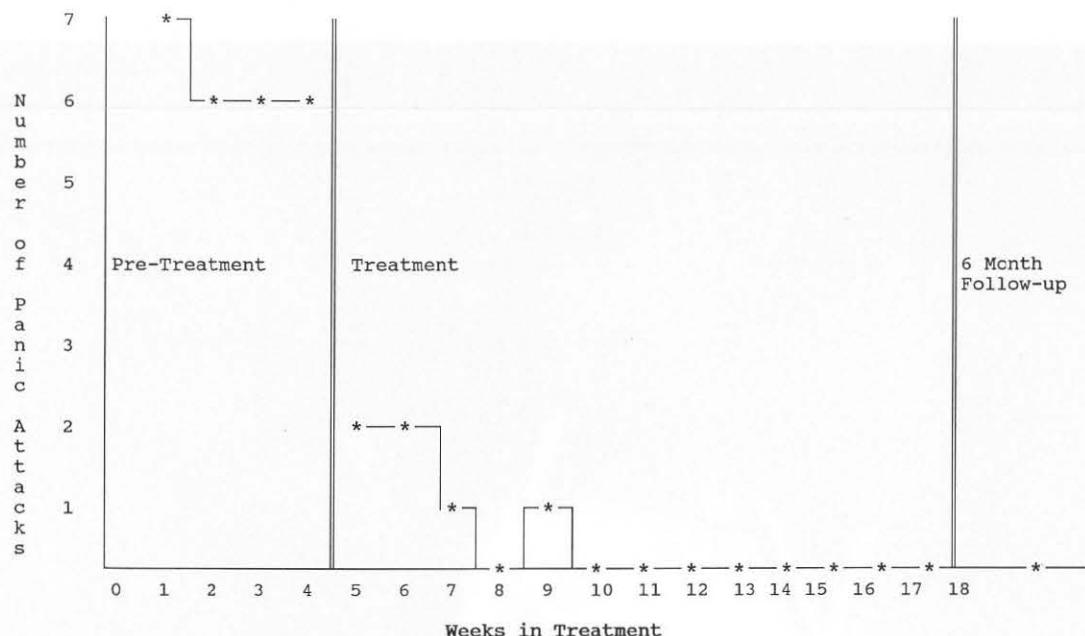


Figure 2. Dolly's Data

improved coping skills and enhanced interpersonal relationships, as reported by the patients as well as their family members and friends. Social validation was measured by asking the patients and their families how much they liked the treatment outcome.(7) Both patients and their families overwhelmingly responded that they were more than satisfied with the favorable and dramatic outcome. The patients especially stated how much confidence they obtained from this treatment program. Linda and Dolly believe that they were able to generalize what they learned in this treatment program to other areas of their lives; for example, gaining cognitive control over other problems, learning to cope with fear, increasing social interactions.

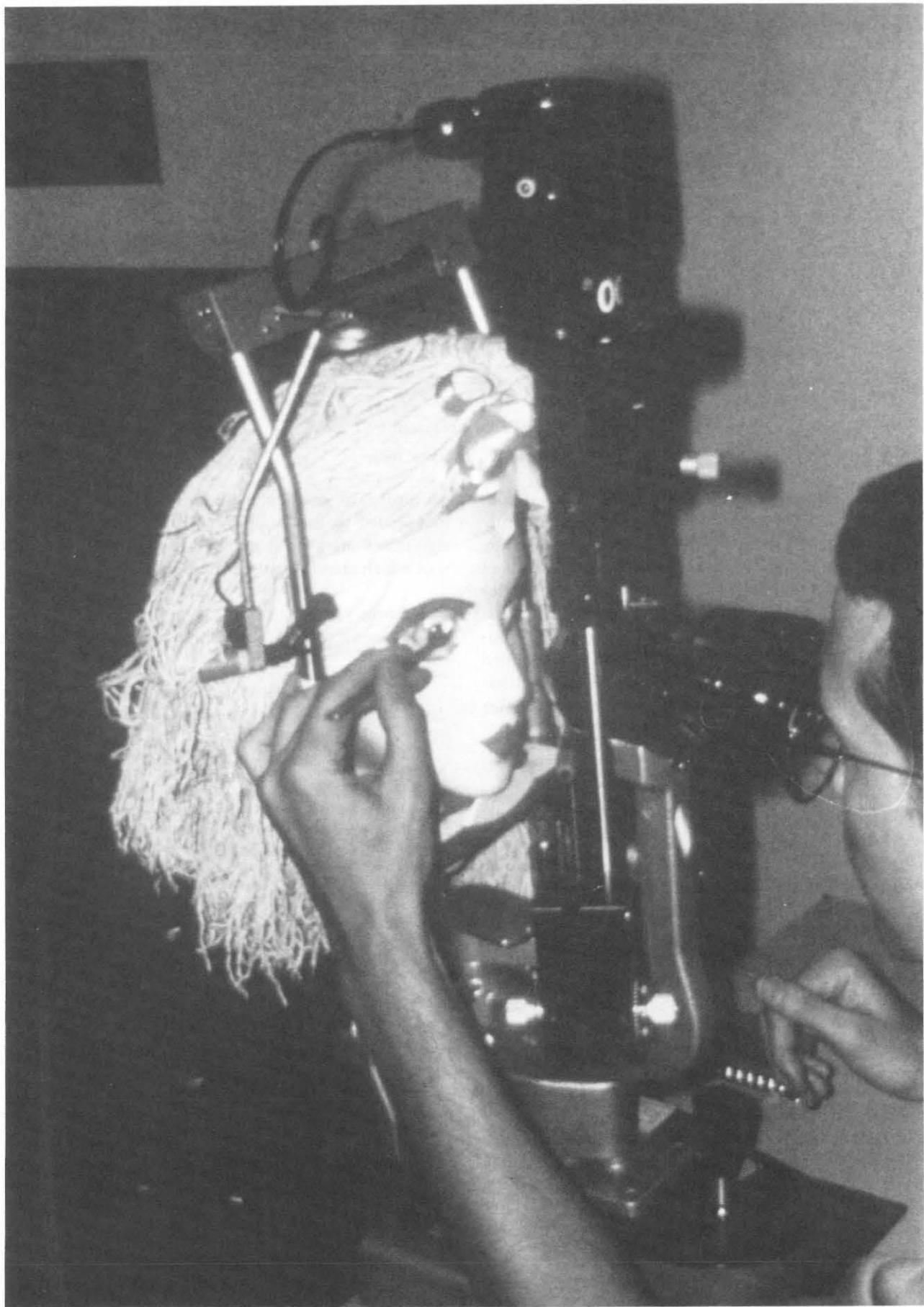
While this study does not offer experimental evidence for the obtained results, it was not intended to do so. The clinical study is important for a number of reasons. First, two patients with a disorder which could have become psychologically disabling and financially costly with unnecessary medical care were successfully treated with an inexpensive, short-term treatment approach. There is also the fact that the patients did refuse to accept psychotherapy. Both patients associated this therapy approach with the stigma of being "sick."(8) They were, however, both very willing to receive the cognitive behavioral treatment approach. The rationale given by them why they positively viewed this model was they could see a clear connection between the procedures and their attacks.(6,9,10) Also, the technological, rational, time-limited methodology was similar to a medical procedure model. It could be argued that the patients' positive outlook toward the treatment package may have had a placebo effect. This situation is unlikely(11) since while the patients did view the package positively, they doubted its efficacy because of the distressfully and disabling nature of their attacks. Second, this treatment package can be easily learned and used by other therapists. Third, the importance of being able to treat a

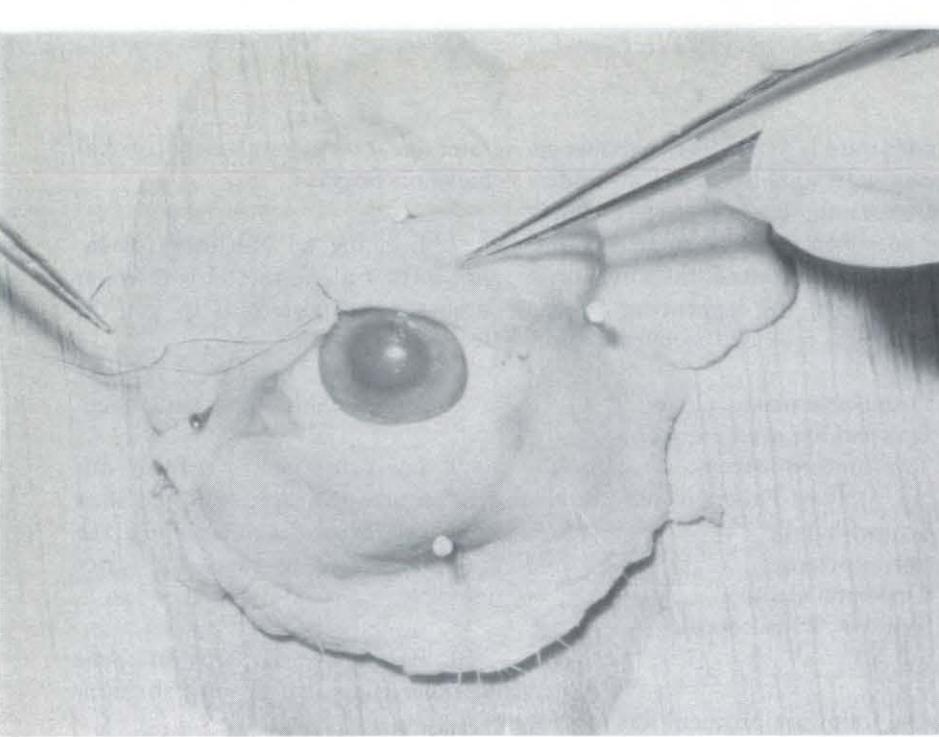
psychological problem with medical complications was highlighted by this study.(12,13) Fourth, the inclusion of significant others was seen as an important therapeutic tool which should be used more often.

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Opposite page: Aided by slit lamp, a student removes a foreign body from a pig eye realistically mounted in a mannequin head. **Left:** Students suture specimen lid.

"Feedlot Fellowship" Program: Training Student Flight Surgeons in Emergency Orbit Trauma Repair

CAPT A.S. Markovits, MC, USNR

It is common knowledge only to naval aviation insiders that the eye doc on a carrier is the flight surgeon. He (or they) is (are) the acting eye professional for around 3,000 ship's company personnel, 2,000 air group, and another few thousand from support surface vessels, helicopter-able to the carrier. Granted, most of the time, severe ocular problems can be medevaced ashore to highly skilled surgical ophthalmic care in a matter of 2-8 hours. Even during the Persian Gulf War, there were two marvelously equipped hospital ships (not to mention civilian and field hospitals) within a few miles of the troops. But, how about back to peacetime, on a run from Hawaii, to say, Diego Garcia. Halfway there, an eyelid is sliced in two by jagged sheet metal or a cornea

is perforated by a shard of glass from an exploding light bulb. Sure, antibiotics, patches, sedatives, and bed rest are fine, but do you medevac the eyelid laceration at an incredible expense, and can you wait the 24 hours it will take to get the perforated globe to a strange hospital in Singapore?

Facing these questions and being oculoplastically and otherwise surgically inclined, I harked back to my residency days at the University of California at San Francisco and recalled that as a first-year resident, I had the onerous duty of driving to the slaughterhouse in Daly City, where I acquired pig eyeballs. I took them back to the university and used them to practice microsurgery, which, in 1967, was just coming into clinical use in cataract surgery.

Recalling the marked similarity of the pig eye to the human eye in size and texture (although the pig's cornea is thicker) and repeatedly hearing from the student flight surgeons about how they would like more practical experience, I decided to provide a good surrogate. To my dismay, the nearest slaughterhouse to Pensacola was in Century, FL, some 60 miles north, on the Alabama border. We made the trip, acquired the eyeballs, but soon found that implanting foreign bodies into the cornea was no easy task. This problem was finally surmounted. An interested NAMI (Naval Aerospace Medical Institute) staff flight surgeon made small oblique incisions into the cornea and inserted sharp galvanized iron flakes (acquired from the floor of a hardware store that threaded plumb-



Student team at work

ing pipe ends) with jewelers forceps.

Thus, the lab model for an embedded metallic foreign body that could be removed with a foreign body spud was born. Styrofoam head hat models were then acquired; one of the orbits of these heads was hollowed out just large enough to accept the pig's eye wrapped in a 4" x 4" gauze or tissue for neatness and snugness. The head was taped to the slit lamp and presto—an ideal training apparatus to teach what cannot be taught didactically; i.e., coordination of the student's eye, the slit lamp, the foreign body spud, and the "patient's" eye.

A portion of the cornea was denuded of epithelium and a felt marker pen was used to make a stain creating a mock rust ring upon which the student could practice with the battery-powered rust ring remover and Alger brushes. I then decided to exenterate an orbit. Alas, even with a No. 15 Bard-Parker blade I did not do well, but all was not lost. When I explained to the staff at the slaughterhouse what I was trying to accomplish, I was greeted with superior smiles and told to "leave it to the pros." Sure enough, a week later I was presented with a dozen beautifully exenterated orbits, i.e., specimens with upper and lower lids and canthi intact, with an intact globe between the lids.

After a little experimentation, we found that these specimens could be

pinned onto 1/4-inch thick balsa wood sheets with upholstery broad-headed tacks for immobilization. The fact that the specimen could be rotated in any direction simulated the surgeon's mobility in the operating room. Instruments provided each team were:

- Disposable plastic gloves
- One locking needle driver
- Two-toothed forceps
- No. 11 Bard-Parker blade
- Scalpel handle
- Spring scissors
- Chalazion clamp
- Syringes, 25 ga. needles
- 6-0 silk

The following protocol was formulated. Students worked in pairs. The exercise was first demonstrated by the instructor and then the teams supervised by the instructor and his proctor(s):

1. Sever the lid vertically; one team member the lower lid, the other member the upper lid (to get one "feel" of the tissue) with a No. 11 Bard-Parker blade.

2. Place the gray line 6-0 silk suture, including at least 1½ mm to 2 mm wide bite, but do not tie it.

3. Place and tie the tarsoconjunctival suture from anterior to posterior, then posterior to anterior so knots are anterior; don't irritate cornea or conjunctiva.

4. Tie the gray line suture, cut and leave ends long.

5. Close skin, including long ends of gray line suture into top skin suture knot to keep it inferior, away from irritating the cornea.

6. Evert the lid on a chalazion clamp, and excise an imaginary chalazion with a vertical tarsoconjunctival incision; curettage and excision of a small vertical crescent of tarsoconjunctiva. Stick needle through jaws of chalazion clamp to view in excision

crater (creation of fistula as I do in real chalazion surgery).

7. Injecting an imaginary chalazion further along the lid with water (simulating deposteroid) to get the "feel of it."

8. Lateral canthotomy performed.

9. Instructor incises cornea; student sutures the laceration and then inflates the eye with saline through the pars plana area to check for water tightness.

10. Partner repeats steps on upper lid and eye, assisted by prior surgeon.

Students are allowed to practice this as long as they wish. About 1½ hours has proved adequate. Most students do two lid lacerations each. After a break, students and instructors move to another room where three slit lamps have been set up with the dummy heads, pigs' eyeballs with previously implanted foreign bodies, and simulated rust rings. There they practice under supervision using:

- Hockey stick spud
- Jewelers forceps
- Rust ring removers
- Syringes, 25 ga. needles, water if eyes need inflation

Are the students being taught too much? I don't think so. After being given some rough guidelines on when they should watch and when they should act (48 hours on the lid laceration, 8-24 hours on a real leaking corneal or scleral perforation), I reassure them that eye professionals can usually redo a less than perfect job. Probably the worst complication they might cause is puncturing a previously undamaged natural lens while closing a corneal laceration. I'd trade a cataract for the loss of an eye anytime. □

Dr. Markovits is head of the Ophthalmology Department, Naval Aerospace Medical Institute, NAS, Pensacola, FL 32508-5600.

In Memoriam

CDR Margaret (Peggy) A. Nash, NC, former World War II Navy nurse and prisoner of war, died at her home in Walnut Creek, CA, on 24 Nov 1992. She was 81.

CDR Nash was born in Edwardsville, PA, and graduated from Hanover High School in 1929. She entered Mercy Hospital School of Nursing, Wilkes-Barre, PA, and graduated in 1932. In 1936 she joined the Navy Nurse Corps at the encouragement of her uncle, Congressman C.W. Turpin.

Her first assignment was at Naval Hospital, Portsmouth, VA, where she served for 2 years before reporting to Naval Hospital, Newport, RI. From Newport she went on temporary duty at Naval Hospital, Mare Island, CA, before receiving orders for her first overseas assignment, U.S. Naval Hospital, Guam. In September 1941 she arrived at her new assignment at the U.S. Naval Hospital at Canacao in the Philippines shortly before Pearl Harbor.

When Japanese bombers rained death on the adjacent Cavite Navy Yard on 10 Dec 1941, Nash and her fellow nurses took refuge under the nurses quarters. Fifty years later she recalled her first introduction to World War II. "Our corpsmen went out with the ambulances and we stayed in the hospital with the casualties. And I know many of them didn't come back. I know when I walked in the hospital and looked at the ward, I said 'Oh, my God, this is really war.' And the rest of the girls felt the same way."*

Nash and the rest of the "girls"—10 other Navy nurses—were captured when Manila fell to the Japanese in January 1942. They spent the next 37 months in Santo Tomas and Los Banos internment camps before being rescued by U.S. Army paratroopers in a daring raid 23 Feb 1945.** Debriefed at Oak Knoll Naval Hospital in Oakland, CA, Nash learned that she had contracted tuberculosis and that at best she had but 5 years to live. Far from giving up the ghost, her tuberculosis was arrested, and she was medically discharged from the Navy in 1946.

In 1948 CDR Nash assumed the role of what she called "a part-time nurse" at the Student Health Center at the University of California Berkley's Cowell Hospital. She retired from the university in 1973 and, afterward, volunteered to care for senior citizens in their homes.

Until her death, CDR Nash was active in the Navy Nurse Corps Association. She held the Bronze Star, awarded by the Army, and was awarded the Gold Star in lieu of a second Bronze Star by the Navy. The awards were for: "Meritorious achievement, while in the hands of the enemy, in caring for sick and wounded." She also received the Army's Distinguished Unit Badge.

—Contributed by CAPT Doris Sterner, NC, (Ret.), and Andree Marechal-Workman, Public Affairs Office, Naval Hospital, Oakland, CA.

*From an oral history conducted by Andree Marechal-Workman on 21 Aug 1992 now in the BUMED Archives.

**See *Navy Medicine* "Reminiscences of a Nurse POW," May-June 1992.



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Statement of Ownership, Management and Circulation (Required by 39 U.S.C. 3685)		
1a. Title of Publication NAVY MEDICINE	1b. PUBLICATION NO. P-5088	1c. Date of filing 6 October 1992
2. Frequency of issue Bimonthly	2a. No. of issues published annually 6	2b. Annual Subscription Price \$8.00 Domestic \$10.00 Foreign
3. Complete Mailing Address of Known Office of Publication (Street, City, State and ZIP + 4 Code) (Not present) NAVY MEDICINE, Department of the Navy, Bureau of Medicine & Surgery (098) 2300 E St., N.W., Washington, DC 20372-5120		
4. Complete Mailing Address of the Headquarters of General Business Offices of the Publisher (Not present) Department of the Navy, Bureau of Medicine & Surgery (098) 2300 E St., N.W., Washington, DC 20372-5120		
5. Full Name and Complete Mailing Address of Publisher, Editor, and Managing Editor (Not done MUST NOT be blank) Department of the Navy, Bureau of Medicine & Surgery (098) 2300 E St., N.W., Washington, DC 20372-5120		
6. Name and Complete Mailing Address of Editor Jan E. Herman, NAVY MEDICINE, Department of the Navy, Bureau of Medicine & Surgery (098), 2300 E St., N.W., Washington, DC 20372-5120		
7. Name and Complete Mailing Address of Managing Editor Virginia M. Novinski, NAVY MEDICINE, Department of the Navy, Bureau of Medicine & Surgery (098), 2300 E St., N.W., Washington, DC 20372-5120		
8. Name and Complete Mailing Address of Publisher, Editor, and Managing Editor (Not done MUST NOT be blank) Department of the Navy, Bureau of Medicine & Surgery (098) 2300 E St., N.W., Washington, DC 20372-5120		
9. Known Stockholders, Mortgagors, and Other Security Holders Owning or Holding 1 Percent or More of Total Amount of Bonds, Mortgages or Other Securities (If none, so state.) None		
10. Full Name Department of the Navy		
11. Complete Mailing Address Bureau of Medicine & Surgery (098) 2300 E St., N.W., Washington, DC 20372-5120		
12. Full Name None		
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Navy Medicine 1935



A Navy nurse and her student Chamorro nurse treat native children in the U.S. Navy's children's clinic in Guam.

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